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ANNUAL REPORT

OF THE

DEPARTMENT OF AGRICULTURE

OF THE

PROVINCE OF ALBERTA

FOR THE YEAR

1943

PUBLISHED BY ORDER OF THE LEGISLATIVE ASSEMBLY

EDMONTON:
PRINTED BY A. SHNITKA, KING'S PRINTER
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To His Honour,
J. C. Bowen,
Lieutenant Governor of the Province of Alberta.

Sir:

I have the honour to submit herewith the Report of the Department of Agriculture for the year 1943.

I have the honour to be, Sir,

Your obedient servant,

D. B. MacMillan,
Minister of Agriculture.

CONTENTS

	PAGE
Report of the Deputy Minister	7
Report of the Field Crops Commissioner	13
Report of the Live Stock Commissioner	28
Report of the Dairy Commissioner	38
Report of the Poultry Commissioner	54
Report of the Director of Extension	59
Report of Provincial Veterinarian	87
Report of Animal Pathologist	93
Report of Provincial Apiarist	96
Report of School of Agriculture, Olds	99
Report of Supervisor of Junior Activities	107
Report of Acting Supervisor of Relief Settlement	114
Report of Provincial Horticultural Station, Brooks	116

DEPARTMENT OF AGRICULTURE
1943

HON. D. B. MACMILLAN, *Minister of Agriculture*

Heads of Branches

O. S. Longman, Deputy Minister and Superintendent of Schools of Agriculture.
A. M. Wilson, Field Crops Commissioner.
A. A. Campbell, Acting Live Stock Commissioner.
D. H. McCallum, Dairy Commissioner.
C. W. Traves, Poultry Commissioner.
R. M. Putnam, Director of Extension.
P. R. Talbot, Provincial Veterinarian.
R. Walton, Acting Animal Pathologist.
W. G. le Maistre, Provincial Apiarist.
J. Murray, Principal, School of Agriculture, Olds.
S. H. Gandier, Supervisor, Youth Training and Junior Activities.
E. B. Swindlehurst, Acting Supervisor, Relief and Land Settlement.
P. D. Hargrave, Superintendent, Brooks Horticultural Station.

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REPORT OF THE DEPUTY MINISTER

(O. S. LONGMAN)

THE HONOURABLE D. B. MACMILLAN,
Minister of Agriculture.

SIR:

I have the honour to submit herewith the thirty-seventh Annual Report covering the activities of the various branches of the Alberta Department of Agriculture for the year 1943.

FIELD CROPS

During the year, production yields approached the long-term average. The 37-year average for wheat is 17.3 bushels per acre as compared with 16.6 in 1943; oats 35.1 as compared with 33.3 as a long term average, and in barley the 1943 yield was 25.0 bushels per acre as compared with 24.6 as the 37-year average. The acreage of major grain crops was substantially altered as compared with 1942. The reduction in wheat was 24%, while oats and barley increased 11% and 16% respectively. The Dominion Wheat Acreage Reduction Policy effected a reduction of 56% from the 1940 level. It is estimated that during the year 59,000 farmers received approximately $8,000,000.00 under the Dominion Wheat Acreage Reduction Policy.

Lack of transportation facilities has resulted in a limited movement of grain from farms. Country elevators are in most cases filled to capacity. The increased price obtained for grain and live stock has greatly improved the economic position of farmers throughout the Province, as revealed in the reduction of farm debts, payment of arrears and current taxes and the purchasing of Victory bonds in rural areas.

Minor crops, including flax seed, forage crop seeds, field and canning peas and other specialized crops, have shown a substantial increase, arising out of war demands. Export demand for Alberta seed crops has been keen, and in the case of clovers and grass seeds it has been necessary for the Department to withhold stocks from export in order to protect essential seed supplies for Alberta farmers. During the year the Department has continued to aid municipalities and farm organizations requiring supplies of various farm crops, particularly seed of legumes and grass crops. Registered and certified seed in Alberta continues to enjoy a strong export market, although the production of registered cereal crops has been substantially reduced.

Alberta is particularly adapted to growing legume and grass crops. During the past year, the Department has devoted much time in organizing growers into an effective marketing organization. This endeavour has culminated in the Department arranging with the growers to assume full responsibility for the marketing of their products in the incorporation and establishment of The Alberta Seed Growers' Association, Ltd., which represents the final chapter in this Departmental endeavour.

Having completed arrangements for the marketing of Alberta seed crops, the Department, through its Field Crops Branch, is now directing attention to the more systematic production and marketing of vegetable crops. Up to the present, little attention has been paid to these important crops. During the past year the Alberta Vegetable Growers' Association was formed to encourage the use of better production practices and to assist in the assembling, grading and marketing of vegetable products.

Pest Control

The presence of disease in potatoes has necessitated the Department (in co-operation with the University of Alberta and the Dominion Department of Agriculture) undertaking the production of supplies of disease-free foundation stock seed by the tuber index method, for distribution to qualified seed producers. This policy is having a marked effect upon the reduction of disease in Alberta grown potatoes.

Weed Control

The problem of weed control and the debilitating of lands as the result of weed infestation continues to grow. During 1943, due to showery weather, the control of noxious weeds was made exceedingly difficult. Under these circumstances, the weakness of the straight grain fallow practice and the effectiveness of forage crops in controlling weeds became increasingly apparent. During the year the weed control programme throughout the Province was administered by a staff of four Departmental Supervisors, 25 Improvement District Inspectors, and 280 Municipal Weed Inspectors, the latter engaged and paid by the municipalities.

Provincial Horticultural Station, Brooks

The plantings at the Provincial Horticultural Station, Brooks, included 253 varieties of apples and crabapples as well as 348 stone fruits. Experimental and demonstration work has been conducted in order to secure disease-free or disease resistant varieties in horticultural crops. Special crops, such as sunflowers, rape, vegetable seeds, etc., have been tested and were grown during the year. The returns from these crops proved to be quite profitable when grown in a commercial way. The production of open-pollinated crops for seed, such as beets and rape, is a new venture in the irrigated districts. The success attained in 1943 was most encouraging.

Live Stock

Cattle, hogs and poultry have shown a substantial improvement in volume and value during 1943. Cattle marketings have increased by 15,000 head with an average increased value of $11.00 per head over 1942 prices. The demand for pure-bred breeding stock has been keen. At 1943 auction sales, over 800 pure-bred bulls of beef breed sold for an average of $373.64, compared with $240.28 in 1942.

Since 1938, the farmers of Alberta have increased their swine production by 205%, the annual increases being: 1939, 25.16%; 1940, 51.58%; 1941, 31.32%; 1942, 11.88%; and 1943, 9.62%. The hog marketing for 1943 amounted to 2,392,383 hogs, having an estimated value of $60,100,000.

Poultry

It is a great satisfaction to observe the advance which has been made in all branches of the poultry industry since 1940. The total

value of commercial eggs, hatching eggs and poultry meats has increased from $7,618,000 to $17,333,000. Through the establishment of properly designed and accepted Registered Grading Stations for the purchasing and grading of eggs, a great improvement in the quality and value of eggs has been effected. Approximately 200 egg grading stations are now operating in the Province.

The hatching of chicks has developed into a sizeable industry. The capacity of Alberta hatcheries has increased to 1,408,000 eggs, an increase over 1936 of 152%. In 1943, there were 3,607,000 chicks hatched, or an increase of 35% over 1936.

In order that hatcheries might obtain eggs from pullorum free flocks, the Department, through its Poultry Branch, tested 460 flocks of 120,840 birds by the whole blood agglutination method. From these flocks the hatcheries secured their egg supplies.

Feeder Associations

Seventeen feeder associations were operated during the year, and membership of associations and active feeders have increased. Over 13,000 cattle and 31,452 sheep, costing approximately $1,000,000, were fed by the associations.

Dairying

The dairy industry throughout the Province attained an all-time high in milk and butter production. Milk production amounted to 1,788,740,000 pounds, and the total value of milk produced was $34,181,566, as compared with $31,574,838 in 1942. Farm income was substantially enhanced during the past year when Dominion subsidies, not included in the above, amounting to $3,103,000 were paid.

It is estimated that 376,000 cows were giving milk, having an average production of 4,757 pounds per cow. This production ratio is too low, and should be increased if dairying is to be maintained on a profitable basis. Within the Province there are 93 creameries, 18 cheese factories, and 9 licensed concentrated milk plants. The Dairy Branch staff and inspectors, in addition to inspection duties, assisted dairy factories in maintaining properly trained staffs, conducted short courses in dairy plant operations, cream testing and sanitation. The analytical services of the Dairy Branch Laboratory have been utilized more extensively during the past year, special emphasis being placed upon mould and yeast analysis of creamery butter. As the result of this service, there has been a noticeable reduction of loss in the manufacture of butter due to these inspections.

Control of Animal Diseases

The Provincial Veterinarian and the Provincial Veterinary Laboratory's continued services have been extended to farmers and veterinarians throughout the Province in the control of animal diseases. It has been the constant endeavour of these services to maintain a high standard of health in farm animals during the war period. The increased production of live stock throughout the Province, and the losses accruing from disease, are matters of chief concern of these branches. Naturally, the increase in the production of swine brought with it a major problem in the control of disease. Many of the conditions arising which cause loss of swine are due to improper management, feeding and care, as well as parasitic infestation. An endeavour has been made to educate and

provide such information as will permit farmers to prevent these losses, or keep them to a minimum.

Services of the Provincial Veterinary Laboratory have been provided without charge, and the efforts of the laboratory are, and have been, directed towards educating farmers to reduce their losses by preventive measures. During the year, the total of 1,406 specimens have been received and examined, 2,322 blood samples were submitted for agglutination test and contagious abortion of cattle. In addition, 3,309 chickens and 4,141 turkeys were submitted by the Poultry Branch for test of pullorum disease.

Testing cattle for tuberculosis has been completed in 13 municipalities and partially completed in three others by Dominion Government veterinarians operating under the Dominion Restricted Areas Plan.

During the year, a policy of artificial breeding of live stock was inaugurated, with headquarters at the Olds School of Agriculture, under the supervision of W. H. T. Mead. Mr. Mead was given an opportunity to study the operation and organization of artificial breeding associations in other parts of Canada and the United States. A laboratory has been constructed at Olds and the initial organization of the service is well under way.

Extension Service

The main function of the Agricultural Extension Service is the distribution of agricultural information. Under this branch is included the supervision and direction of District Agriculturists, Farm-forVictory Committees, placements for farm labour, farm short courses, farm field days, the Women's Extension Service, and the distribution of agricultural publications.

Field Extension Service

During the year, the District Agriculturist service has devoted its full efforts to the production of essential agricultural products and the farm labour problem. This has necessitated an incease in the staff from 19 to 28, revision of territories and the establishment of new offices. During the year, it is interesting to note all District Agriculturists held a total of 1,260 meetings, having a reported attendance of 50,850 people. These meetings were called, for the discussion of matters of current interest, such as agricultural engineering, crop production, swine, dairy and poultry production and the farm labour supply. During the year, 29 farm engineering field days were conducted as a means of assisting in the reduction of labour requirements on the farm. Assistance was rendered at 27 field days held by the Supervisor of Dominion Illustration Stations.

This service distributed 296,500 topical bulletins, of which 81,000 were leaflets, supervised and arranged for approximately 225 radio broadcasts over the University Radio Station. During the summer months, 16 agricultural fairs were held, and it was noted that although entries at the fairs were lower than in previous years, the attendance was substantially higher.

Farm Labour

The placement of farm labour under the Dominion-Provincial Farm Labour Agreement, made heavy demands on the staff of the Department, and the Extension Service in particular. The general supervision of the programme was effected through a joint com-

mittee composed of officials of National Selective Service, the Provincial Department of Agriculture, and farm organizations. Local supervision was directed by the District Agriculturists. Closely affiliated with District Agriculturists were the Province-wide services of the Farm-for-Victory Committees. Under the Dominion-Provincial Farm Labour programme, 5,017 persons were placed on farms or in essential industries. The total number requested during this period was 6,474. Two hundred farmers were transported from the drought area to other parts of the Province.

There were brought into the Province 761 harvesters, directly from Ontario. In addition, 475 Ontario harvesters came to Alberta from Manitoba and Saskatchewan following the completion of the harvest in those Provinces. As the result of an agreement between the Department of National Defence and the Department of Labour, 462 "farm duty" soldiers were detailed to Alberta harvest fields during the Fall season. In addition to the above, slightly over 1,800 soldiers from the armed forces were given compassionate harvest leave.

At Brooks and Lethbridge use was made of prisoners of war, where approximately 200 men were utilized to assist on the farms at harvest time. In addition to assisting in providing labour for farmers, the Department undertook to encourage the utilization of labour-saving devices. During May and June instruction was given at the Olds School of Agriculture to blacksmiths in the construction of stook sweeps. About 20 blacksmiths took advantage of this course and a larger number secured brief instruction. Seventy-three stook sweeps were built at Olds by these blacksmiths. It was estimated that before the end of the season 400 stook sweeps were in operation, which replaced approximately 1,200 men required for harvest.

Under the Dominion-Provincial Farm Labour Agreement, funds were made available to assist in the movement of harvesting equipment, and 15 outfits were moved from the southern to the central part of the Province under this policy.

During the late Fall an effort has been made to encourage men who are not needed on farms during the winter to take employment in essential industries, such as mining, logging, etc. Permits given to these men expire on March 31st, 1944, thus assuring that they will be returning to the farms for spring work. During the year this campaign resulted in approximately 4,500 men being obtained for work in essential industries other than agriculture.

In addition to the foregoing, surveys reveal that 7,366 boys and girls assisted with the harvest for a period of at least two weeks between September 1st and October 10th, and 8,765 were engaged in farm work for some period during the prolonged vacation. This is a source of labour which made a very substantial contribution to the harvesting of the 1943 crop.

Women's Extension Work

The demand for the services of the Women's Extension staff continues to grow. During the year, 461 demonstrations were given, with an aggregate total attendance of 14,500. This Branch has co-operated with the Department of Public Health as a provincial organization in organizing nine local Nutrition Committees. During 1943, four temporary and one full-time District Home Economists were appointed and assigned to areas in which to carry out summer

programmes and demonstrations. There appears to be a greater need for more winter demonstration work among farm women, as that is the time of year when rural women are free to attend meetings and carry on a practical programme. Women's extension work is increasing so rapidly that the present staff is unable to cope with the demand. The time has come for the Department to consider the establishment of a comprehensive women's expansion programme by the appointment of a field staff upon a permanent basis, in the form of District Home Economists to serve the women of the Province in much the same manner as the District Agriculturists serve the farmers.

During the present war it has been recognized that women play a very important role in the economy of the country, and it is important they be given authentic information and practical suggestions as to how they can assist in carrying out the war-time programme. It is also recognized it will be highly important after the war that home-makers be given direction in the building of the health and vigour of the family group and in the general improvement of the standard of living.

School of Agriculture, Olds

The School of Agriculture at Olds is the only one at present in operation. Students are drawn from all parts of the Province. The 1942-43 term ended in April. Forty-two young men graduated in Agriculture, and 30 diplomas were issued to graduates in Home Economics. The accommodation at the school is inadequate to meet the demands that have been imposed upon it as the result of the closing of the school at Vermilion for the use of the armed forces.

During the summer months, short courses were held under the auspices of the Junior Farm Clubs, Women's Institute Girls' Clubs, and Farm Women's Week. These courses were well attended and appreciated by the public.

During the year many outside organizations, including officials of the Dominion Department of Agriculture and several Departments of the Provincial Government, have been most co-operative and helpful. Also assistance has been received from municipal councils and farmer organizations, and finally the staff of our own Department. To all these, I wish to extend my thanks and fullest appreciation for loyal support and efficient service.

Yours respectfully,

O. S. Longman,
Deputy Minister.

REPORT OF THE FIELD CROPS COMMISSIONER

(A. M. Wilson)

Yields of the major farm crops in Alberta in 1943 were very close to the long time averages. Over a period of 37 years, the yield of wheat per acre has averaged 17.3 bushels. In 1943 the yield is estimated at 16.6 bushels. For oats, the estimate is 35.1 as compared to 33.3 as a long term average, while in barley the 1943 yield is reported as 25.0 against 24.6 as the 37-year average.

In contrast to 1942, the winter of 1943 was most severe with exceptionally heavy snowfalls, which commenced on November 15th and remained late into the spring. The Peace River area alone reported light snow coverings. Seeding generally was delayed because of moisture from melting snow and because of the necessity of threshing or disposing of that portion of the 1942 crop which had been left in the fields the previous fall.

The acreages of the major grain crops are interesting in that they have approximated closely those asked for by the Agricultural Supplies Board. Wheat acreage decreased 24% from the previous year, while oats and barley increased by 11% and 16% respectively. The flax acreage rose sharply from 183,000 acres in 1942, to nearly 600,000 in 1943.

Because of the change in cropping plans, supplies of high quality seed of recommended varieties of some kinds of grain were insufficient to meet the demand. Shortages of registered and certified oat, barley and flax seeds occurred. Seventy-five thousand bushels of seed oats, for the most part certified, were shipped from the Peace River to the north-eastern section of the Province centering around St. Paul and Willingdon because of frost injury to seed in the latter areas.

The seed of forage crops, particularly legumes, was in strong demand, and those farmers who delayed obtaining their requirements, in many instances found that supplies had been exhausted. This situation was aggravated because of severe winter injury to legume crops, particularly in the north central section of the Province. In the Athabasca and Falher districts many fields were so badly damaged that new seedings were required. The damage was primarily the result of a cover of ice forming under the exceptionally heavy snow.

The Wheat Acreage Reduction Policy again operated in 1943. Farmers received compensation of $2.00 for each acre by which their wheat crop was reduced below their basic or 1940 acreage. Because of this fact, and because of the late spring, wheat acreage was reduced by 24% from that of the previous year, or to 56% of the 1940 level. It is estimated that wheat acreage reduction payments totalling eight million dollars will be made to approximately 59,000 farmers in 1943.

The Canadian Wheat Board continued to regulate the sale and delivery of grain. Although farm and country elevators were, in most instances, filled to capacity, optimism prevailed among farmers. This was due to the increased Board price of 35c per bushel for wheat and the equalization payments of 10c and 15c per bushel

respectively for oats and barley, combined with the hope that large quantities of grain would soon be required for Axis-occupied countries.

The production of forage crops both for feed and seed purposes has increased, and interest has increased in the growing of peas for table use and for seed purposes. Vegetable seed production in the Brooks district has met with considerable success. Soya beans and sunflowers have not as yet proved themselves satisfactory crops for Alberta.

The following shows the estimate of field crops produced in Alberta in the 1943 with comparative figures for 1942:

Crop	1942 Acres	1943 Acres	1942 bus per acre	1943 bus per acre	1942 Bushelage	1943 Bushelage
Spring Wheat	6,370,000	4,829,000	27.9	16.6	178,000,000	80,000,000
Oats	3,284,000	3,676,000	53.3	35.1	175,000,000	129,000,000
Barley	1,925,000	2,239,000	39.0	25.0	75,000,000	56,000,000
Fall Rye	140,000	54,800	20.7	14.0	2,900,000	766,000
Spring Rye	75,000	47,400	20.0	9.9	1,500,000	468,000
All Rye	215,000	102,200	20.5	12.1	4,400,000	1,234,000
Peas	16,000	30,300	19.0	14.0	304,000	424,000
Beans	2,300	800	11.7	12.0	27,000	10,000
Mixed Grains	73,000	80,600	36.9	27.0	2,694,000	2,176,000
Flaxseed	183,000	600,000	12.0	6.5	2,200,000	2,600,000
			cwt.	cwt.	cwt.	cwt.
Potatoes	28,500	31,200	95.0	69.0	2,708,000	2,153,000
Turnips, etc.	4,400	4,200	109.0	100.0	480,000	420,000
			tons	tons	tons	tons
Hay and Clover	463,000	657,800	1.70	1.55	787,000	1,020,000
Alfalfa	220,000	226,000	2.50	2.20	550,000	497,000
Fodder Corn	14,000	10,700	4.50	4.60	63,000	49,000
Sugar Beets	27,600	29,100	12.39	10.24	342,000	298,000

Forage Crop Policy

The establishment of a permanent type of agriculture in this Province is dependent on a more general use of forage crops. Adequate soil conservation, practical weed control, successful live stock production and efficient farm management require the employment of grasses and legumes in the cropping programme.

The Provincial Forage Crops Policy has been designed to lend definite encouragement to farmers who could be interested in purchasing forage crop seed. Under the policy, grass and legume seeds were made available to farmers at cost, freight prepaid, and numerous agencies were established throughout the Province where farmers could obtain information as to prices, place their orders and later take delivery of their seed.

Since 1937, the Department of Agriculture has entered into three-year agreements with a large number of municipal districts, whereby farmers were given an opportunity to purchase limited quantities of forage crop seeds at part cost. Farmers in improvement districts were given similar opportunities through District Agriculturists' offices. This plan served a most useful purpose in that many farmers were encouraged to purchase seed who might not otherwise have done so. Approximately 60 municipal districts completed their agreement in the past three years, and it is noteworthy that many of these have continued to distribute seed at cost.

During the year the distribution plan was extended to five new municipal districts and to seven new local improvement districts.

A summary of seed distribution to date is as follows:

Kind of Seed	Price 1943	Pounds Distributed 1943	1942	1937-42
Alfalfa	33c	143,323	98,238	401,900
Red Clover	30c	12,095	7,450	41,860
Alsike Clover	27c	13,089	6,450	34,088
Sweet Clover	8½c	75,759	26,185	234,082
Timothy-Alsike Mixture	14½c	3,486	3,115	8,041
Timothy	7½c	37,003	12,690	82,224
Crested Wheat	10c	53,640	41,225	167,531
Red Fescue	48½c	1,404	.....	50
Red Top	21½c	550	340	1,285
Brome	10c	163,706	68,253	344,705
		504,055	263,936	1,315,766

Because there is a strong demand for Alberta-grown grass and legume seeds on the export market, an increasingly important function of the Forage Crop Policy is to reserve a supply of seed for the use of Alberta farmers. Seed distribution in 1943 was limited to a very large extent, to the amount of seed which was available and upon the financial limit to which the policy could be extended.

Alfalfa and brome are in greatest demand, and are being seeded in all sections of the Province. Crested wheat is largely confined to the drier, open prairie sections. Red clover, alsike and timothy are in demand in the grey and black soil areas where the precipitation is greater.

In conjunction with the Forage Crop Policy, the Field Crops Branch has stressed the importance of proper legume inoculation, careful seeding and management practices and the use of grass-legume mixtures for forage purposes. Farmers in districts suitable for seed production have been supplied with the best seed obtainable.

Field Pea Seed Distribution Policy

In order to obtain information as to the suitability of field peas as a supplementary crop in the mixed farming sections of Alberta, a limited supply of seed was made available to farmers under terms of an agreement with the Field Crops Branch in the spring of 1943.

There were 23 farmers who obtained a maximum of 20 bushels of seed each under this agreement. A wide variation in yields occurred, but the general average was from 20 to 30 bushels per acre. Where the peas were grown on suitable soil, which was relatively free from weeds, results were highly satisfactory.

A keen demand for peas for soup purposes developed through the season, and resulted in a price increase of from 4c per pound in the spring to 6½c per pound after threshing.

Reports indicate that the production of this crop will increase considerably in 1944.

Production and Sale of Registered and Certified Seed

The production of registered and certified seed continues to hold an important place in our farm economy. If we are to maintain our strong export market for seed as well as for commercial grain, it is essential that a good supply of carefully selected seed stocks be available to grain growers in Alberta. We are particularly favoured by a soil and climate conducive to the production of high quality seed, and have developed an increasing demand for Alberta grown seed in Eastern Canada and the United States.

The following is a summary of crops inspected for registration and certification in Alberta in 1943:

Variety	Registration			Certification		
	No. Growers	Acreage	Est. Yield	No Growers	Acreage	Est. Yield
Wheat	78	1,853	50,568	7	189	5,630
Oats	181	6,712	440,260	97	3,184	209,467
Barley	66	1,337	58,985	27	658	23,845
Flax	39	1,218	15,876	11	579	8,173
Alfalfa	56	565	165,840	14	347	49,200
Brome	6	324	56,800	74	12,182	960,300
Crested Wheat	13	271	69,450	7	187	22,900
Creeping Red Fescue	....	.....	.....	13	650	185,750
Red Clover	2	8	200	....	.....	.....
Timothy	2	10	3,560	....	.....	.....
Sweet Clover	....	.....		2	105	40,000

Forage Crop Seed Production

The marked increase in acreage seeded to forage crops in Alberta in recent years may be attributed to four principal causes. Under the Wheat Acreage Reduction Policy, farmers were encouraged to replace wheat by some other crop, and received a bonus on land seeded to forage crops. Again, the Provincial Forage Crops Policy added encouragement by making forage crop seeds more readily available at attractive prices. Insistent and repeated recommendations by agricultural authorities and extension workers are generally gaining recognition by the farming public, particularly those whose interest in good forage has sprung from wartime demands for increased marketings of beef and dairy products. Further, some areas in Alberta have proven exceptionally well adapted to grass and legume seed production, which requires a minimum of labour. All these factors have increased local demands for seed which, together with the strong export demand have stimulated forage crop seed production in Alberta.

The following figures give the estimated production in Alberta of the most important forage seed crops with the 1940, 1941 and 1942 figures for comparison:

Kinds	1940, lbs.	1941, lbs.	1942, lbs.	1943, lbs.
Alfalfa	600,000	570,000	2,000,000	1,450,000
Sweet Clover	300,000	320,000	2,000,000	1,500,000
Red Clover	150,000	200,000	240,000	450,000
Alsike	200,000	180,000	430,000	200,000
Timothy	1,000,000	1,250,000	1,350,000	1,000,000
Crested Wheat Grass	300,000	400,000	250,000	300,000
Brome Grass	2,000,000	3,025,000	3,500,000	4,000,000

The Field Crops Branch has given particular attention and encouragement to the following organizations interested in the production and distribution of good seed:

The Alberta Seed Growers' Association, Ltd.

This co-operative association is now operating as an independent organization, with offices in the Alexandra Block, Edmonton. It is essentially a seed marketing organization, acting as a selling agency for both cereal and forage crop seed growers.

The following officers were appointed for 1943-44: President and Managing Director, H. P. Wright, Airdrie; Vice-President, L. Hendrigan, Winfield; Manager, C. T. Walker; Secretary, Col. J. McK. Hughes, Flatbush; Directors, C. C. Patching, Lethbridge; J. M. McElroy, Calgary; L. C. Anderson, Bittern Lake; H. E. Bronson, Cherhill; D. Thomas, Sangudo; A. M. Smith, Wembley; Ben Plumber, Bassano.

Affiliated local district associations include: The Sangudo-Mayerthorpe and District Co-operative Seed Growers' Association, Sangudo; The Pembina Valley Co-operative Seed Growers' Association, Cherhill; The Central Seed Growers' Association, Westlock;

The Falher Regional Seed Growers' Association, Falher; The Holyoke Seed Growers' Association, Holyoke; The Bonnyville Seed Growers' Association, Bonnyville; the Progressive Seed Growers' Association, Warburg.

Forage crop seed cleaning plants are operated by the Alberta Seed Growers' Association at Camrose and at Coronation. Affiliated associations operate seed cleaning plants at Sangudo and at Cherhill.

During the crop year 1942-43, the Alberta Seed Growers' Association handled 2,877,207 pounds of forage crop seed, which moved to both local and export markets. Handlings of cereal seed grain and peas totalled 106,372 bushels.

The Alberta Crop Improvement Association.

This association is directed by a committee in which are represented the North-West Line Elevator Association; the Farmer-owned Elevator Companies; the Plant Production Service, Dominion Department of Agriculture; the Alberta Seed Growers' Association; the Canadian Seed Growers' Association (Alberta Branch); the University of Alberta; the Alberta Department of Agriculture.

It has concerned itself particularly with the problem of encouraging a wider use of registered and certified cereal grains. Through co-operation of the grain companies and the Alberta Seed Growers' Association, arrangements have been made whereby grain elevator agents are authorized to accept farmers' orders for registered and certified seed. This arrangement facilitates the ordering of seed by farmers, and has made good progress in achieving the association's objective. Registered and certified seed grain marketed through the Alberta Crop Improvement Association in 1943 was as follows:

	1940	1941	1942	1943
	bus.	bus.	bus.	bus.
Wheat	68,900	16,000	5,961	3,000
Oats	60,825	99,000	34,659	10,500
Barley	4,100	4,500	4,349	2,500
Flax			868	

In addition to the above, in 1943 about 2,517 bushels of wheat, 95,645 bushels of oats and 3,950 bushels of barley were sold as certified seed in carload lots.

The Alberta Varietal Zonation Committee.

The purpose of this committee is to co-ordinate the findings of the various experimental agencies in the Province and to recommend the varieties of field crops best suited to the different agricultural zones in Alberta.

The committee is composed of representatives of the following: Department of Field Crops and Department of Soils, University of Alberta; Provincial Field Crops Branch; Provincial School of Agriculture; Dominion Experimental Farms Branch; Plant Products Division; Dominion Department of Agriculture; Dominion Laboratory of Plant Pathology, Edmonton.

The recommendations of this committee were printed in bulletin form by the Field Crops Branch and widely distributed throughout the Province in 1943.

The Alberta Certified Seed Potato Growers' Association.

Any grower of certified seed potatoes may become a member of this association, whose primary concern is the production and marketing of certified seed potatoes.

The following summary is based on seed potato field inspections, 1943:

Variety	No. Growers	Grade	Est. Yield
Netted Gem	5	Foundation	205 bus.
Netted Gem	22	Foundation A	5,870 "
Netted Gem	8	Certified	2,200 "
Warba	2	Foundation A	75 "
Warba	1	Certified	60 "
Vic's Extra Early	1	Foundation A	50 "
Early Vermont	1	Foundation A	50 "
Irish Cobbler	2	Foundation A	70 "
Carter's Early Favorite	3	Foundation A	125 "
Carter's Early Favorite	1	Certified	100 "
Early Ohio	3	Foundation A	125 "

All the above stocks are subject to tuber inspection. Every sack must carry the official Government tag before it is fully qualified.

The Southern Alberta Vegetable Growers' Association.

This association was incorporated as a co-operative in the summer of 1943 with the object of serving the interests of vegetable growers in Southern Alberta through encouraging the use of better seed, and assisting in the assembling, grading and marketing of uniformly high quality vegetables.

Foundation Stock Seed Potatoes.

In order to encourage the production of good quality seed potatoes, the Field Crops Branch continued to assist in producing indexed foundation seed potato stocks. Through co-operation with the University of Alberta and the Seed Potato Inspection Branch of the Dominion Department of Agriculture, over 1,200 tubers were tested in the greenhouse for freedom from disease, and seven growers received approved indexed stocks of seed, from which foundation seed of four different varieties were produced in 1943. This work should have a marked effect in improving the quality of potatoes grown in Alberta.

Portable Seed Cleaners

The Province in 1943 continued its policy of assisting organized groups of farmers in obtaining the use of portable seed cleaners. Twelve cleaners were in operation during the season. These were located at Innisfail, Gage, Berwyn, Fairview, Camrose, Grande Prairie, Warburg, Airdrie, Barrhead, Sangudo, Cherhill, and Springbank.

The use of clean seed is fundamental in any weed control programme, and this policy serves two purposes. First, it provides seed cleaning facilities for the farmers who are "clean seed" conscious; and secondly, it encourages less interested farmers through the fact that this facility is available and is operated by a community of local individuals who foster the practice of using only clean seed.

The approximate quantities of grain, grasses and legume seed cleaned in the 1942-43 season are as follows:

FORAGE CROPS

Kind	Quantity (bushels)
Wheat	73,257
Oats	59,368
Barley	16,373
Flax	10,483

FORAGE CROPS

Kind	Quantity (pounds)
Brome	166,468
Alfalfa	247,609
Sweet Clover	110,859
Altaswede Red Clover	22,008
Alsike	1,481
Timothy	26,223
Mixtures	6,400

Weed Control

The 1943 crop season featured a wet, cold spring which delayed the growth of grain crops and allowed weeds to become well established. Showery weather continued throughout the summer in Central Alberta and made proper summer fallowing difficult or impossible. This favoured the growth and spread of both annual and perennial weeds. Labour shortage on most farms aggravated the problem, and the net result was that the weed situation throughout most of Alberta became considerably worse during the year.

Under these circumstances the weakness of straight grain-fallow practice and the greater effectiveness of forage crops in controlling weeds became increasingly apparent.

Weed inspectors are being encouraged to attack the weed problem not only with the object of eradicating bad infestations, but with the aim of encouraging farmers to adopt a type of cropping programme that will prevent further infestations, control present infestations by proper crop rotations, and at the same time preserve the fertility of the soil. Competitive short season crops which will permit spring and fall cultivation, forage crops, and summer fallow all form a part of such a programme. It is just as essential that further infestations be prevented as it is that present troublesome areas should be cleaned up.

Weed inspectors were encouraged to promote seeding down weed infested areas to forage crops. In many cases older people whose sons are in the armed forces attempted to farm more land than they were able to handle properly. Seeding some of this land to forage crops would reduce the cultivation necessary and free it of weeds, and leave it in good condition for production when the returned soldier requires it. Many weed inspectors reported increased interest in the use of forage crops in soil conservation and weed control. Four supervisors, 25 improvement district inspectors, and about 280 municipal weed inspectors formed the field staff in 1943.

The improvement district inspectors are directly responsible to the Field Crops Branch, and the success of the work in their districts in encouraging. A uniformity of effort and results is present there that is not apparent in the municipal districts. Some municipal districts are doing an excellent job of weed control, while unfortunately many others are giving little or no attention to the problem.

In 1943, as in 1942, the Department of Agriculture, assisted by the Provincial Marketing Board, arranged with the Wartime Prices and Trade Board for the purchase of 40,000 pounds of sodium chlorate. This was distributed at cost to farmers through the offices of municipalities and through weed inspectors.

Considerable attention was given to the seeding down of weed infested lake shores which were giving trouble as a source of infestation of adjacent farm lands. An attempt was made to survey the troublesome areas and to make arrangements with neighbouring farmers to seed them to forage crops in the spring of 1944.

Seed germination studies with tartary buckwheat were continued in 1943 both by Norman G. Lewis, Dominion Supervising Seed Analyst, Calgary, and by the Department of Botany at the University of Alberta. Further consideration was given to having tartary buckwheat declared a week under The Noxious Weeds Act; but

owing to the fact that it is grown as a commercial crop in parts of Eastern Canada, no action was taken.

The four perennial weeds—hoary cress, leafy spurge, Russian knapweed and field bindweed, present a serious problem because little information has been obtained regarding their control under Alberta conditions. Information obtained from the United States is being applied, however, and some valuable leads are being obtained.

Experimental work with these weeds under Alberta conditions is required, however, if any sound programme of eradication is to be instituted. Then if success is to be obtained we will need the closest co-operation between the farmer and the Provincial and Municipal authorities on a long time programme of eradication.

Pest Control

Practically every crop grown has its own special pests, both insect and disease. As we increase the variety and concentration of crops in any area, we aggravate the pest problem accordingly. In addition to the above axiom is the fact that many pests, particularly insects, gradually widen their sphere of adaptation. Both of these trends have been observed in the past, and were demonstrated again in 1943. They strengthen the conviction that despite our efforts at control the problem of crop protection is inevitably growing.

This is exemplified by the fact that this year the Colorado potato beetle greately increased its depredations in north central Alberta. Increased wheat stem sawfly infestation also occurred, while bacterial ring rot appeared in potato crops in sections of Alberta heretofore believed foreign to it. In spite of the above facts, however, this year has not been spectacular. Some damage has been caused in certain areas by pests, but in general, conditions have been about what was to be expected in the normal upward trend.

Grasshoppers.

A further decrease in the grasshopper population occurred in 1943. The egg-lay in the fall of 1942 was moderately heavy, but due to the cold spring the hatch was erratic, and over much of the grasshopper area it was light and very late. The outbreak was consequently spotty. Late in the season, adult grasshoppers were very numerous in certain areas, but generally speaking, crop damage was light this year. Some wheat and oat crops were damaged along the margins. Flax crops were most heavily attacked, and in the section from the Vulcan-Nobleford C.P.R. line east to Enchant, Travers and Retlaw some fields were stripped by adult grasshoppers in August to the extent of about 10%, while a few fields lost as high as 50%. It is estimated that about 5% of all flax in the southern part of the Province was lost due to grasshoppers nibbling off the seed boles.

Where farmers took advantage of available supplies of bait, little or no damage to any crops was suffered. Cover crops on summer fallow along the western side of the Province, particularly from Stavely to Granum, were heavily attacked in August. Actual defoliation was reduced to a negligible extent through the highly satisfactory poisoning campaign carried out by the M.D. of Argyle. Outside of this municipality, where farmers could not be induced to use bait, the cover crops were heavily damaged, and during early winter some soil drifting occurred.

Local grasshopper outbreaks occurred far to the north. Bait was supplied to farmers and gardeners in the Fort Vermilion settlement in township No. 108 and at Ft. Simpson in the North-West Territories to assist them in protecting their crops and gardens.

The following are some comparative data respecting the 1942 and 1943 grasshopper campaigns:

	1942	1943
Acres of land in the area	26,250,000	19,750,000
Acres of crop land menaced	237,800	100,000
Number of stations operated	45	20
Bushels of poison bait spread	49,000	15,000
Number of farmers receiving bait	817	256
Estimated acres of crop destroyed	12,000	6,000
Estimated acres of crop saved	39,000	15,000

Wheat Stem Sawfly.

With the return of lower and more normal precipitation in the southern and eastern part of Alberta this year, the sawfly menace increased. In the humid season of 1942 there was little or no decrease in the number of adults which emerged from the wheat stalks. The weather during the period of oviposition was clear and warm, consequently the egg crop was heavy. Stands of wheat were generally light so that in many fields 100% of the stems were infested. Damage to the wheat crops of Alberta is believed to have been greater this year than ever before. Most farmers in the area extending from the United States boundary north to Provost and from the Saskatchewan boundary west as far as Macleod, High River, Strathmore and Coronation suffered some loss. Most severely affected were those in the chinook belt, particularly where strip farming is practiced as a soil conservation measure. Losses ranged from 10% to 90% in the Retlaw, Arrowwood, Milo, Carmangay and Warner districts. Cases are known where practically 100% of the wheat stalks were cut down. Instead of swathing or binding the crops early in order to avoid loss, most farmers waited for combine harvesting. Finally, efforts were made to recover the grain with hay rakes, but in most cases shattering was so great that the grain retrieved was scarcely worth the effort. Alberta's loss through sawfly damage in 1943 is unofficially estimated at 10,000,000 bushels. Farmers are reticent to undertake recommended control measures in spite of the publicity given to the sawfly menace. Acceptance of effective control recommendations is very slow regardless of the heavy losses being suffered. While many growers have saved their crops by the trap strip technique, the majority still accept the loss in preference to altering their traditional farming practices.

Minor Crop Pests.

The humid 1942 season resulted in a light population of Say's Grain Bug. No losses were reported; but by late summer, however, several southern communities again had this pest approaching the danger point.

Wireworm damage was about normal. While damage to cereal crops in the southern part of the Province was negligible, some reseeding was necessitated in lighter soil areas in central Alberta. Potato and root crops were damaged to some extent by this pest.

Cutworms caused slight damage in grain and garden crops throughout the Province. Sugar beets were attacked after thinning, but at no point were losses severe.

The sugar beet webworm scarcely put in an appearance this year.

The cycle of the forest tent caterpillar waned in 1943 after three years of heavy damage to trees and shrubs in central and northern Alberta. The present outbreak appears to have been about completed.

The extremely heavy snow covering during the winter of 1942-43 no doubt helped the Colorado potato beetle to consolidate the gains it made in its 1942 invasion of central Alberta. Some damage was done by this pest in the area extending northwards from Red Deer in 1943, particularly where the growers had not been acquainted with it. A satisfactory control effort was made in truck cropping areas. The supply of insecticides was sufficient, and most northern crops were adequately protected. The shortage of farm help in the southern irrigation districts made satisfactory control of the beetle impossible. Many crops were completely defoliated, and the yield of many fields of potatoes was reduced. It is doubtful if southern Alberta has ever before experienced such a vast number of potato beetles as it did this year.

No cases of psyllid infestation were found in Alberta in 1943. A careful watch was maintained over most greenhouses. The continued absence of any severe necrotic conditions in southern Alberta potatoes was also encouraging.

Rodents.

The most destructive rodent in 1943 was probably the common field mouse. Because of the unfavourable harvest season of 1942 much of that year's cereal crop remained in the stook over winter. Mice caused up to 50% damage in many barley and oat fields, but somewhat less in wheat, before the crops could be threshed in the spring.

The work instituted in 1942 to find a means of combating the Columbian ground squirrel was continued. A fairly satisfactory poison mixture has now been tested and is ready for use. Towards the end of the season plans were completed for organizing a campaign against this pest in Alberta's foothill region.

Warble Flies.

Warble flies were abundant over the entire Province this season except where cattle were treated in the early spring. The warble fly control campaign instituted early in the season was comparatively successful. Some 350,000 cattle were treated. In areas where control was not actually practiced heavy oviposition occurred and "gadding" was extensive.

Crop Diseases

Probably the two most serious crop losses due to diseases were caused by crown rot of alfalfa and bacterial ring rot of potatoes.

Crown Rot.

This disease caused heavy mortality in alfalfa stands, particularly in the area centering on Westlock and also in the Edmonton area. While the presence of a great deal of winter killing complicated the situation, many fields were very heavily damaged, and will require complete re-seeding after the soil becomes free of the crown rot organism.

Bacterial Ring Rot.

The bacterial ring rot situation in this Province deteriorated again this year. The number of farms with infected crops shows an increase of 55% over 1942, while the acreage of diseased potatoes found increased by 42%. Some of the increase shown in the above figures may not be actual, but may be the result of a more complete survey being made than ever before.

While the main epidemic is still confined to the irrigation areas centering on Brooks and Lethbridge, the infection is now known to exist at Drumheller, Calgary, and Medicine Hat.

The table presented here shows the growth of Alberta's ring rot problem since the first cases were found in 1937:

	1937	1938	1939	1940	1941	1942	1943
No. of Farms Inspected	....	....	680	261	430	406	965
No. of Townships in which disease was found	2	9	11	12	16	22	42
No. of Farms found infected	2	23	40	73	102	151	235
Acres of diseased crop found	..	....	180	674	693	982	1,775

The following table shows the change in the ring rot situation in the last twelve months as found by the 1942 and 1943 surveys:

	Townships Infected		Farms Infected		Acres Infected	
District	1942	1943	1942	1943	1942	1943
Lethbridge	18	31	145	216	938	1,712
Medicine Hat	....	2	....	2	....	1
Drumheller	1	2	1	3	5	6
Brooks (E.I.D.)	3	4	5	8	39	35
Calgary	....	3	....	6	....	21
Total	22	42	151	235	982	1,775

This year new regulations were instituted to assist in the control of this disease. Certain areas where ring rot has been found were designated as "pest areas". It was made obligatory for all commercial growers in these areas to obtain written authority before planting potatoes. It was also made necessary this fall for all growers within pest areas to obtain written authority to move any potatoes from their premises. These regulations constituted a virtual quarantine of all districts where this disease had been known to occur. The enforcing of these regulations has had the effect of reducing the intensity of infection. A continuation of the programme is encouraging the rapid consumption of the infected stocks, and it is expected that some improvement in the situation will result within the next year.

Junior Crop Clubs

The introduction of forage crops as a major project in Junior Club work has necessitated the change in the name from Junior Grain Clubs to Junior Crop Clubs. These clubs have continued throughout 1943, to meet the general desire for crop improvement in conjunction with the training of young people on the farms. Every effort has been made to modify and develop club activities to meet the changing conditions of agriculture. Where older farmers, handicapped by lack of technical knowledge, have been reluctant to use registered seed or to grow forage crops, junior farmers, with their natural initiative, have made remarkable progress in demonstrating the value of such enterprises.

Clubs conducted projects in; wheat, oats, feed barley, malting barley, flaxseed, potatoes, and forage crops. There were in operation 101 clubs, with a total membership of over 1,700 farm boys and girls, all working together for crop improvement. Clubs were

widely distributed throughout the Province, from Tepee Creek in the north-west, to Irvine in the south-east, and from Lafond in the north-east, to Milk River in the south-western part of the Province. The heavy carry-over of wheat in Canada and the general effort to curtail wheat production at the beginning of the year had the natural effect of reducing the number of clubs in the wheat project to its lowest point since the early years of club work. On the other hand, coarse grain clubs this year reached their highest number—a natural development in response to the demand for more bacon and beef for Britain. Thirteen forage crop clubs were in operation. The demand for this type of club was due to a general realization that they would prove helpful in solving some of the more fundamental problems of agriculture, viz., the weed menace and soil depletion. The total number of clubs rose to the second highest point since the inception of crop club work in the Province. The outbreak of war caused an initial decline in club activities, but there has been a gradual increase since 1941 in both the number of clubs and in the total membership.

The number of clubs and members operating in 1943 compare with those of 1941 and 1942 as follows:

	1941		1942		1943	
Project	No. Clubs	No. Members	No. Clubs	No. Members	No. Clubs	No. Members
Wheat	54	896	40	675	23	384
Oats	21	295	22	391	30	542
Feed Barley	....	....	21	412	20	317
Malting Barley	8	92	12	185	10	167
Potatoes	2	19	....	....	3	48
Flax	1	10	....	....	2	26
Forage Crops	....	....	....	....	13	250
Totals	86	1,312	95	1,663	101	1,734

During the year there were 293 official club meetings held, at which a representative of the Department of Agriculture participated. District Agriculturists assist and give guidance to clubs located within their districts and inspect the seed plots from time to time. Members receive registered seed grain for two or three acre plots which are regarded as seed plots for the purpose of multiplying superior seed stocks for the whole farm. Plots are segregated from other crops by a cultivated margin and are weeded and rogued. The seed is threshed and stored separately. In this way about 150,000 bushels of pure-to-variety seed has been produced per year from these plots. It is estimated that over half a million bushels of superior seed grain is used annually as a result of the operation of Junior Crop Clubs. These young farmers have learned how to handle a seed plot, and have demonstrated a practical method of providing superior seed for the whole community at a low cost. There has been a most satisfactory response from farmers in many districts to change from unsuitable varieties to better adapted varieties or from poor, mixed seed to pure seed.

Various competitions in crop club work have served to encourage members to put extra effort into their work. Standing Crop Competitions, Grain Judging Competitions, Local Club Seed Fairs, and Inter-Club Competitions stimulate interest. The Provincial Championship in grain judging was won in 1942 by the Vauxhall Club team, viz., Fred Hildenbrand and Cyril McAndrew, while the runners-up were from the Spedden and Consort crop clubs. In the National Grain Judging Competition held in Ontario, the Alberta team from Vauxhall won the National Championship. The

Drumheller Wheat Club won the award for the best exhibit of threshed grain in the Inter-Club Competition, while the Morrin Club won the General Efficiency award for the whole season's work.

The Department of Agriculture trophy for the highest average score in the inter-club Standing Crop Competition in wheat was won for the fourth time by the Drumheller Club. The Alberta Seed Growers' trophy for the highest average score in the Standing Crop Competition in oats was won for the second time by the Abee Junior Oat Club. Similar honours in feed barley were won by the Grande Prairie Club and in malting barley by the Bon Accord Club.

The principal new feature in crop clubs this year was the addition of a Forage Crop Project. In order to give this type of club a special appeal to members, they were enabled to secure seed to the value of $10.00 for a $4.00 membership fee. The difference between the cost and the fee was contributed by the sponsors and the Provincial Department of Agriculture. Thirteen clubs were organized and were supplied with alfalfa or with a mixture of grass and clover seed. A season of ample rainfall assisted greatly in obtaining satisfactory stands. Success with these plots should encourage a more general use of forage crops by farmers throughout the Province. It is hoped that the wider use of these crops will assist materially in soil conservation, in weed control, and in live stock production, and will play an important role in establishing a more satisfactory agricultural economy in Alberta.

The introduction of Feed Barley Clubs in 1942 has served to give wide distribution to the high-yielding, smooth-awned Newal variety. The ten Contract Malting Barley Clubs in operation last year produced from Registered O.A.C. 21 seed a total of 20,000 bushels of cleaned barley seed of exceptionally high quality for use in the Province this year.

The transfer of the Efficiency Prize trip from Edmonton and Calgary during the winter to the Olds School of Agriculture in July proved, for the second time, to be an unqualified success. About 140 farm boys and girls, each an efficiency winner, gathered for a one-week Agricuutlral Short Course. The appeal of this trip has been greatly enhanced by the change and club members, as a result, are striving harder than ever before to win this free trip award. Two scholarships towards a course at the School of Agriculture were awarded to crop club members attending the short course. The winners were Frank Pawlowski, Vilna, and Laura Storch, Morrin.

Wheat and Forage Crop Clubs were sponsored by the Alberta Wheat Pool; Oat Clubs by the United Grain Growers, Ltd.; Feed Barley Clubs by the North-West Line Elevators' Association, Agricultural Department; Malting Barley Clubs by the Canada Malting Company, Ltd.; and Flax Clubs by the Alberta Linseed Oil Company, Ltd. The support given by these organizations in the matter of providing for part of the cost of seed, prizes and trophies, and free trips has been of great value in stimulating general effort and maintaining interest in the work.

Junior Farm Club activities are based on the principle of "learning by doing". The agricultural life of the Province for tomorrow can be no better than the training of the farm youth of today. Education coupled with experience is the only material that a boy or girl can use to build a fuller life. Club members learn to conduct their business and to express themselves at their regular meetings.

They undertake the responsibilities of office, and develop latent talent for leadership. And so, in Junior Club work our farm youth is provided with opportunities for building up their lives and training their talents for a fuller and more satisfying life on the farm.

Provincial Junior Grain Show

During recent years, adult seed growers have shown decreasing interest in exhibiting their product at seed fairs. As was pointed out in the previous year's report, this waning of interest is attributable mainly to the confidence which has developed in the minds of the seed buying public regarding the quality of established seed grades. Farmers as a rule no longer buy their seed on sample, but depend upon the official grades of seed listed for sale. This confidence has been amply justified, and reflects a most satisfactory condition in the seed grain trade. There are, however, several other factors which contribute to the loss of interest in seed fair by seed growers. There is nothing spectacular about the appearance of a good bulk lot of seed to inspire public enthusiasm; while small, highly prepared samples are not representative of seed offered for sale. The patronage of adult seed growers dwindled to a point where the exhibits of junior farmers made up almost the entire show.

Grain shows, however, have a definite educational value. High standards for crop production are established in the minds of both exhibitors and visitors, and greater discrimination in appraising the value of grain and seed is developed.

In order to retain the educational benefits for the junior farmers who had continued their support of the Provincial Fair so well, a new type of grain show was tried out in 1943 with pleasing results. Entries were restricted to junior exhibitors; only one quart was required for an exhibit, and the show was held at the School of Agriculture, Olds, at the time of their "Little Royal" in March. Reducing the quantity required for an exhibit from one-half bushel to one quart changed the basis of the contest from one of endurance to one of skill. Such a challenge had an increased appeal to farm youth, and brought into play an element of enthusiastic sportsmanship.

Competition was open to all Alberta farm young people between the ages of 12 and 22 years (inclusive). There were from 31 to 38 entries in each of the open classes in wheat, oats and barley. The quality of the exhibits was generally of an exceptionally high standard. A special class for at least a twenty-five bushel bulk lot of cleaned seed in malting barley was sponsored by the Brewing Industry, which offered prizes totalling $135.00 for this class, in which there were 10 entries. Together with the Junior Inter-Club Threshed Grain Competition and a display of Alberta prize winnings and World's Championship samples from the last International Grain Show at Chicago, there were 450 samples of grain and seed on display at the show. Hundreds of visitors viewed the exhibits during the day of the "Little Royal". The grain show was again set up for display at the time of the Junior Farm and Home Week at the Olds School of Agriculture in July, when 140 Junior Club efficiency prize winners from all parts of the Province gathered there. Keen interest in the grain exhibit was shown by this select youth group. Many of them were exhibitors themselves or represented clubs from which many exhibits originated.

So successful was the first Provincial Junior Grain Show that it has been considered advisable to extend the classes and to increase the prize awards in 1944. It is hoped also that this show will retain the interest and develop the skill of Alberta's young farmers to maintain the high reputation of the Province when the International Grain Show is resumed after the war.

REPORT OF THE ACTING LIVE STOCK COMMISSIONER AND SUPERVISOR OF FEEDERS' ASSOCIATIONS

(A. A. Campbell)

The live stock industry of this Province continued to make an important contribution to Canada's war effort. Producers, although faced with a scarcity of farm help and farm equipment, have found ways and means to increase their total output in the industry. Increased marketings of all classes of live stock, cattle, sheep and swine were recorded for the year, and the total revenue from live stock production reached the highest point experienced in the past 25 years.

The Price ceilings as established by the Wartime Prices and Trade Board have assisted in maintaining uniformity in market prices. Increased revenue from live stock production continued to stimulate the demand for breeding stock, and prices for pure-bred cattle reached a new high during the year. Pure-bred hogs averaged $1.64 per head higher at annual Fall sales; however, pure-bred sheep averaged $5.75 per head below 1942 prices. Auction sales of pure-bred stock were marked by a substantial increase in the number of animals sold, which would indicate that producers are keenly aware of the necessity of improving quality of live stock, and are taking the necessary steps to improve herds and flocks.

The heavy grain crop obtained in 1942 provided the majority of live stock producers with ample feed supplies during 1943. Ample feed supplies should be available to meet the live stock production programme in 1944, with the exception of a few localized areas in the Province, which suffered the loss of the 1943 grain crop from frost, hail or drought.

In September, the Dominion Government announced an increase of 35c per bushel on the ceiling price of wheat and the payment of bonuses on oats and barley marketed. These announcements had a disturbing effect on live stock production, and temporarily interrupted fall breeding plans and the winter feeding programme.

Numerous changes in staff increased the work of the remaining personnel.

Interest in all live stock improvement policies was well maintained throughout the year. A brief résumé of the activities of the Live Stock Branch will be dealt with under their respective headings.

Cattle

In 1943, the cattle industry in Alberta experienced the most active and prosperous year since 1918. Steady markets for all classes of cattle and increased prices have stimulated the industry. This condition can largely be attributed to the increased consumption of beef, which is due to military requirements and to better economic conditions within the Dominion. The general trend of cattle production may be denoted by the comparative figures of cattle population for the past six years, according to the June survey, which are as follows:

Year	No. of Head	Year	No. of Head
1938	1,361,000	1941	1,344,950
1939	1,337,400	1942	1,469,000
1940	1,365,900	1943	1,627,000

Dominion Department of Agriculture figures show cattle marketings in Alberta for the past ten years as follows:

Year	No. of Head	Year	No. of Head
1934	183,519	1939	248,748
1935	257,782	1940	257,823
1936	363,811	1941	292,083
1937	311,506	1942	281,278
1938	264,505	1943	296,251

The 12-month average price for choice grain fed steers was approximately $1.50 per cwt. higher than in 1942. The peak price for beef came in July, when choice steers sold at $12.75, and the lowest price in October, when good steers averaged $10.67 per cwt. Average value of all cattle sold was approximately $11.00 per head higher than for the previous year.

The supply of choice beef was not equal to the demand, and a considerable number of cattle which would otherwise have gone to the feed lots were purchased for slaughter purposes. Due to scarcity of moisture, the carrying capacity of cover crops in the Claresholm and High River areas was considerably reduced, and brought a reduction in the number of cattle placed on cover crop in the fall. These cattle were removed from cover crop about December 15th, 40% of them going direct for slaughter and the remainder going to winter feed lots.

The following table shows the trend of cattle exports from Alberta to the United States for the past six years:

Year	No. of Head	Year	No. of Head
1938	38,185	1941	76,534
1939	61,884	1942	51,303
1940	48,889	1943	254

The destinations and numbers of cattle shipped out of the Province during 1943 were as follows:

British Columbia	69,513	Ontario	13,999
Saskatchewan	7,772	Quebec	26,154
Manitoba	22,134	United States	254

Auction Sales of Pure-bred Cattle

During the year there was a marked increase in the number of pure-bred cattle sold. Many breeders held private auction or dispersal sales, at which very satisfactory prices were received. Several public auction sales of pure-bred females were held within the Province, as well as the Bull Sales at Calgary, Edmonton and Lacombe. Average prices for pure-bred bulls sold at the 1943 Annual Spring Bull Sales were 55.6% higher than in 1942. In 1943, 819 pure-bred bulls of the beef breeds brought an average price of $373.94, as compared to the 1942 average of $240.28 for 856 bulls sold. A summary of the bull sales held during the past three years is presented below:

CALGARY BULL SALE

	1941		1942		1943	
Breed	No. Sold	Av. Price	No. Sold	Av. Price	No. Sold	Av. Price
Shorthorn	253	$172.82	176	$192.47	168	$324.94
Angus	107	195.70	146	184.35	78	310.00
Hereford	310	303.77	401	299.23	379	475.69

EDMONTON BULL SALE

Shorthorn	54	$161.50	50	$186.20	80	$223.50
Angus	6	144.17	3	191.67	5	248.00
Hereford	6	258.33	4	167.50	4	361.50

LACOMBE BULL SALE

Shorthorn	50	$109.90	23	$188.91	35	$226.86
Angus	23	136.30	18	195.83	20	248.00
Hereford	40	193.75	35	184.71	50	274.70

In 1943, Alberta consolidated her position as the leading swine producing Province in the Dominion, and established new records in marketing and in total swine population. This Province now holds 28.7% of the hogs raised in Canada as compared to only 2% recorded in 1901. The 1943 June Live Stock Survey estimated Alberta's swine population at 2,337,700 head, which is a record for this Province, and the largest ever recorded by any Province in the Dominion.

During the past five years, farmers have increased their swine marketings 205.6% over the 1938 production. Numbers and value of swine marketed in the Province during the past six years are shown in the following table:

Year	No. of hogs Marketed	Increase over Previous Year	Estimated Total Value
1938	782,857	.....	$14,000,000.00
1939	979,898	25.16%	16,500,000.00
1940	1,485,382	51.58%	24,000,000.00
1941	1,950,659	31.32%	38,000,000.00
1942	2,182,342	11.88%	50,000,000.00
1943	2,392,384	9.62%	60,100,000.00

Prices for B_1 carcasses, basic grade, remained comparatively steady throughout the year, and ranged only from $15.25 to $16.00 per cwt. In September, October and up to November 15th, the average price was $15.25. On November 15th, following the completion of negotiations for the 1944 and 1945 "Bacon Agreement", the basic price was raised to $15.85, and remained at this level for the balance of the year.

Under the new "Bacon Agreement", the British Ministry of Food contracted a minimum delivery of 900,000,000 pounds of bacon in the next two years. While this contract specifies 450,000,000 pounds per year as a minimum, the Ministry of Food has advised that they will take 600,000,000 pounds in 1944 if available. The amount of the new contract is considerably lower than the 675,000,000 pound contract which was completed in December. In the new agreement the price for top quality bacon has been set at $22.50 per cwt. F.O.B. seaboard, and represents an increase of 55c per cwt. over the 1943 contract.

The advance in grain prices during September, without a corresponding increase in hog prices, created considerable dissatisfaction among swine producers in this Province, and led to an abnormally high liquidation of breeding stock. Over 40,000 sows were marketed in September and October, as compared to 14,000 in the corresponding months of 1942. This liquidation of breeding stock coupled with a scarcity of skilled labour at packing plants and the commencement of heavy Fall deliveries of market hogs, created a serious situation at all plants. In order to relieve the congestion which was developing at all marketing centers, a ban was placed on the marketing of sows. This ban was still in effect at the end of the year, and will remain in effect until plant facilities are available to handle the slaughtering and processing of sows.

Pure-bred breeders experienced a very profitable season, and found a ready demand for all surplus breeding stock. There was not sufficient pure-bred stock available at the beginning of the year to meet requirements, and many farmers were unable to obtain pure-bred boars for their herds.

In order to alleviate the shortage of pure-bred sires, the Live Stock Branch purchased two carloads of pure-bred stock from swine

breeders in Ontario. This shipment, consisting of 77 Yorkshire boars, 7 Tamworth boars and 14 Yorkshire sows arrived in Alberta, April 12th, 1943, and was distributed among pure-bred breeders and to applicants under the Swine Improvement Policy. Many favourable comments were received regarding the quality of breeding stock imported. The introduction of new blood lines into the pure-bred swine herds of the Province will contribute to improvement of quality in Alberta's hogs.

Fall sales of pure-bred swine were held at Calgary and Edmonton, and the average price obtained for all stock sold was $1.64 higher than the 1942 average price. Average prices obtained during the past four years are as follows:

	SOWS		BOARS		TOTAL	
Year	No. Head	Av. Price	No. Head	Av. Price	No. Head	Av. Price
1940	159	$24.75	231	$23.12	390	$23.78
1941	177	34.45	217	37.52	394	36.90
1942	218	43.35	239	42.73	457	43.03
1943	271	43.33	283	45.94	354	44.67

A tabulated summary of sales at Edmonton and Calgary for 1941, 1942 and 1943 is set forth below:

EDMONTON SWINE SALE

	1941		1942		1943	
Breed	No. Sold	Av. Price	No. Sold	Av. Price	No. Sold	Av. Price
Yorkshire Sows	52	$ 27.50	75	$ 39.87	72	$ 36.97
Tamworth Sows	....	.....	6	51.25	3	40.00
Yorkshire Boars	44	38.12	91	34.84	77	40.20
Tamworth Boars	1	35.00	....	.....	3	49.17
	97	$ 32.47	172	$ 37.60	155	$ 38.87

CALGARY SWINE SALE

Yorkshire Sows	98	$ 39.88	124	$ 45.34	188	$ 45.47
Tamworth Sows	11	30.68	6	42.08	8	51.44
Yorkshire Boars	123	43.31	119	48.57	171	48.52
Tamworth Boars	22	31.59	20	45.25	30	45.33
Berkshire Boars	2	22.50	....	.....	2	51.25
	256	$ 40.28	269	$ 46.70	399	$ 46.92

Sheep

Alberta continued to maintain its lead in wool production and sheep population. Wool production for 1943 is estimated to be 3,799,000 pounds, with an average fleece weight of 7.8 pounds. While fleece weights are .6 pounds lower, the total wool clip is 80,000 pounds over the 1942 figure. The sheep population now stands at 900,000 head, an increase of 8.7% over 1942.

Marketings of sheep and lambs showed an increase of 1.6%. Average market values per head were slightly lower than in the previous year. Lamb prices ranged from $9.25 to $14.75 per cwt. The peak figure of $14.75 was obtained for some choice lambs marketed in June and July, while the low figure occurred at the beginning of September.

At the end of August, lamb prices were reduced between $2.00 and $3.00 per cwt. to conform with the price ceilings authorized by the Wartime Prices and Trade Board. The sharp drop in lamb prices in September was subject to much criticism by producers, and representations were made to Dominion authorities to have the price ceiling raised. However, the severe drop in lamb prices at September 1st, coupled with higher grain prices, had a retarding effect on the number of lambs purchased for feed lots, and also reflected in lower average prices for pure-bred sheep offered at Fall sales held in October.

In further support of the sheep expansion programme and to encourage the production of cleaner wool, the Dominion and Provincial Departments of Agriculture arranged to share equally in the payment of a bonus of 4c per pound on all standard grades of Canadian fleece wool. The individual clip had to be properly prepared at shearing time and brought to market in good condition, in order to be eligible for the bonus to be paid direct to the grower through the Provincial Department, against wool grading statements bearing a certified stamp of approval.

A slight increase in production of wool and an increase in sheep marketings can be expected for 1944. Under the Sheep Expansion Policy in 1942, a number of new flocks were established in the Province. The same policy was placed in effect for the last four months of 1943, but did not meet with the same response as in the previous year.

Sales of pure-bred sheep were held at Edmonton, Calgary and Lethbridge. At these sales, 428 pure-bred ewes brought an average price of $19.42, and 750 pure-bred rams an average of $36.00. Average prices obtained during the past four years at all Fall sales held in the Province are as follows:

	EWES		RAMS		TOTAL	
Year	No. Head	Av. Price	No. Head	Av. Price	No. Head	Av. Price
1940	172	$15.57	389	$22.23	561	$20.19
1941	189	18.13	569	29.83	758	26.91
1942	150	25.45	592	38.20	742	35.63
1943	428	19.42	730	36.00	1,158	29.87

Below is a summary of the pure-bred sheep sales in the Province for 1941, 1942 and 1943:

SALES OF PURE-BRED SHEEP

	1941		1942		1943	
Breed	No. Sold	Av. Price	No. Sold	Av. Price	No. Sold	Av. Price
EDMONTON:						
Suffolk Ewes	34	$ 14.70	4	$ 15.88	10	$ 21.90
Oxford Ewes	3	14.00	14	15.23	28	11.18
Shropshire Ewes	....	.....	....	.....	5	11.40
Southdown Ewes	12	10.41	2	9.00	12	10.92
Hampshire Ewes	12	14.41	4	16.50	20	13.35
Totals	61	$ 13.77	24	$ 15.06	75	$ 14.49
Suffolk Rams	78	$ 24.17	73	$ 28.87	49	$ 43.38
Oxford Rams	38	14.89	50	33.70	46	25.18
Shropshire Rams	15	20.17	14	31.61	9	15.11
Southdown Rams	12	20.00	12	28.33	11	18.17
Hampshire Rams	46	28.50	33	41.51	75	34.26
Totals	189	$ 22.78	202	$ 33.54	190	$ 32.57
Grade Ewes	....	.....	.....	.....	70	$ 10.79
CALGARY:						
Suffolk Ewes	19	$ 31.05	17	$ 44.06	141	$ 25.11
Shropshire Ewes	4	16.25	18	13.86	25	14.56
Southdown Ewes	30	20.33	28	24.91	34	18.59
Hampshire Ewes	37	24.00	63	27.94	153	17.57
Totals	90	$ 23.92	126	$ 27.43	353	$ 20.47
Suffolk Rams	79	$ 42.12	125	$ 48.44	197	$ 40.99
Shropshire Rams	4	48.75	17	36.62	12	29.00
Southdown Rams	31	35.87	43	26.34	30	19.15
Hampshire Rams	123	39.92	89	48.31	173	39.80
Rambouillet Rams	....	.....	6	45.00	6	45.83
Corriedale Rams	....	.....	....	.....	13	37.85
Totals	237	$ 40.01	280	$ 44.21	431	$ 38.63
Grade Ewes	105	$ 11.03	144	$ 12.36	576	$ 8.88

LETHBRIDGE:						
Rambouillet Rams	55	$ 18.54	43	$ 31.02	50	$ 23.79
N.Z. Corriedales	5	29.80	7	45.00	8	42.81
Can. Corriedales	33	27.58	44	28.98	45	37.64
Mature Rams	....	.....	4	44.25	6	35.08
Totals	93	$ 22.35	98	$ 31.34	109	$ 31.53

The Bull Exchange and Assistance Policy

Assistance under this policy is available to farmers who are not breeders of pure-bred cattle, and can show a certification that they have sold a grade or inferior type bull for slaughter purposes, thus being eligible to a 10% reduction in their purchase price of a pure-bred bull and also free freight thereon to their nearest railroad shipping point. Following the receipt of an application, with the necessary remittance, a pure-bred bull is purchased and shipped to the applicant.

This policy has been in operation for five consecutive years, and 192 bulls were placed with farmers during the year of 1943.

The Dairy Heifer Calf Policy

The Dairy Heifer Calf Policy was inaugurated in 1942 to meet the increased demand for improvement in the quality of dairy cattle. Work under this policy was continued in 1943, and a total of 56 heifer calves were collected from dairymen in the Edmonton Milk Shed and distributed to members of organized Junior Dairy Calf Clubs. Since the inauguration of the policy, 160 heifers have been distributed to calf clubs.

Sheep and Swine Improvement Policies

These policies are designed to assist commercial sheep and swine producers in purchasing approved type sires. Regulations governing these policies require the farmer to submit an application, accompanied by payment in full. The Live Stock Branch administers the policies, approves the applications, and is responsible for the selection, purchase and distribution of pure-bred sires. The Department pays the transportation charges on the pure-bred sires to the nearest railway shipping point of the applicant.

A decrease in the number of animals distributed through the policies is shown for 1943, as compared to distribution in 1942. During the first eight months of 1943 the distribution of pure-bred boars was 17.5% ahead of the same period in 1942, but the demand dropped rapidly, and in the last four months only 60 boars were distributed as compared with 193 boars for the corresponding period in 1942. The number of pure-bred sires which have been distributed under the policies during the past five years are as follows:

Year	Swine Improvement	Sheep Improvement
1939	287	....
1940	153	52
1941	224	69
1942	357	81
1943	256	26

Live Stock Listing Bureau

The service of this Bureau in the purchasing of registered live stock is available to breeders who are not eligible to apply for assistance under the several other Live Stock Improvement Policies. Applicants using this service not only include beginners in the pure-bred business, but also some of the long established and best breeders.

A record is kept of pure-bred stock offered for sale, and this information is made available to enquirers. Upon receipt of an application accompanied by the necessary remittance, members of the Branch locate, purchase and arrange for shipment of animals, carrier charges collect.

A substantial increase in the number of animals handled through the Bureau is noted in the following summary:

1942—	1943—
Cattle—25 Bulls, 15 Cows or Heifers.	51 Bulls, 12 Heifers.
Swine—10 Boars, 24 Sows.	50 Boars, 31 Sows.
Sheep—14 Rams, 11 Ewes.	9 Rams, 4 Ewes.

Dominion-Provincial Sow Distribution Policy

Reports of this policy indicated another successful year, with 22 Swine Improvement Associations organized and a total of 554 gilts purchased by members.

The Dominion Department of Agriculture has provided a pure-bred boar for each association organized, and to a large extent has been responsible for selection of gilts purchased by each association. Transportation costs on the movement of sows obtained under this policy are shared equally by the Dominion and Provincial Department of Agriculture.

Members of this Branch have at all times enjoyed the closest co-operation with members of the Dominion Production Service in the administration of this policy.

Live Stock Breeders' Associations

Seventeen Feeders' Associations were in operation during the year. A satisfactory spread in price prevailed, and the majority of members who fed cattle, ewes or lambs realized substantial profits. The extreme difficulty experienced in threshing the 1942 crop curtailed available feed supplies, resulting in fewer live stock being placed in feed lots. There has been an increase in membership of associations and number of active feeders.

VOLUME OF OPERATIONS OF ALBERTA FEEDERS' ASSOCIATIONS DURING THE FEEDING SEASON OF 1942-1943

Association and Address	Cost of Animals	Cattle	Sheep	Total Membership	No. Members Feeding
Battle River Livestock Feeders' Ass'n, Camrose	$ 67,005.01	1,026	.....	41	32
Bow Valley Livestock Feeders' Ass'n, Brooks	81,365.07	488	8,522	116	26
Cardston Livestock Feeders' Ass'n, Cardston	62,308.65	913	701	27	24
Carstairs Livestock Feeders' Ass'n, Carstairs	28,099.92	331	.....	16	12
Central Alberta Livestock Feeders' Ass'n, Lacombe	89,467.81	1,346	.....	115	30
Edmonton and District Feeders' Ass'n, Edmonton	55,214.12	807	.....	120	27
Innisfail Feeders' Ass'n, Innisfail	34,500.75	540	.....	79	13
Lethbridge Feeders' Ass'n, Lethbridge	66,079.09	591	3,598	38	19
Olds Livestock Feeders' Ass'n, Olds	73,398.37	1,291	.....	64	26
Raymond-Magrath Feeders' Ass'n, Magrath	59,149.10	526	3,358	83	26
Red Label Feeders' Ass'n, Raymond	49,864.23	755	248	45	18
South Slope Feeders' Ass'n, Brooks	93,289.52	270	5,713	53	18
Taber Livestock Feeders' Ass'n, Taber	34,215.22	465	.....	72	13
U.I.D. Livestock Feeders' Ass'n, Glenwood	66,913.61	390	5,961	64	29
Vauxhall-Albion Ridge Feeders' Ass'n, Vauxhall	81,462.13	862	3,351	78	32
Vermilion and District Feeders' Ass'n, Vermilion	89,473.22	1,660	.....	112	58
Wainwright-Edgerton-Chauvin Feeders' Ass'n, Edgerton	60,962.61	1,018	.....	113	34
	$1,092,768.43	13,279	31,452	1,236	437

The Stock Inspection Act and The Brand Act

Due to heavy movement of cattle through various marketing channels, additional inspection service was necessary. The Live Stock Branch appreciates the valuable assistance and support rendered by members of the Royal Canadian Mounted Police, in investigations and enforcement of regulations pertaining to these Acts.

During the year there were 2,816 new brands recorded to their respective owners, consisting of 2,200 cattle, 605 horses, 3 sheep, 7 poultry, and 1 fox; 264 transfers were registered; strays, searches and certified extracts numbered 294; cancellations 67, renewals 4,617 (2,899 cattle, 1,701 horses, 3 poultry, 14 fox), making a combined total of 8,058 transactions. Compared with 1942, these brand figures show an increase of 481 cattle, 392 horses and 5 poultry, and a decrease of 5 sheep and 1 fox.

The approximate number of brands now in good standing in our registers are as follows:

Cattle Brands	16,882
Horse Brands	8,477
Poultry Brands	23
Sheep Brands	22
Fox Brands	62
	25,466

The Domestic Animals (Unorganized Territory) Act

Work continued throughout the year in the administration of this Act, relating to the establishment and maintenance of pound districts and disposal of estray animals.

There are 399 pounds now in operation.

The Horned Cattle Purchases Act

Money derived by the deduction of $1.00 per head on all horned cattle offered for sale or shipment is utilized in defraying expenses incurred in the administration of the several Live Stock Improvement Policies and correlated work.

Restricted Area Plan

The testing of cattle for tuberculosis in definite areas was continued throughout the year, and the number of districts which are accredited stands at 12, as compared to eight districts in 1942. Accredited areas and the date to which they are accredited are as follows:

Municipal District		Date to which Accredited
Clover Bar	No. 517	March 1st, 1949
Evergreen	No. 427	February 1st, 1944
Haig	No. 396	July 1st, 1949
Lakeside	No. 397	September 1st, 1948
Lambton	No. 306	July 1st, 1947
Lloyd George	No. 457	July 1st, 1943
Melrose	No. 426	September 1st, 1949
Michichi	No. 277	July 1st, 1949
Starland	No. 307	July 1st, 1943
Vimy	No. 337	December 1st, 1946
Waverly	No. 367	December 1st, 1947
That Part of Improvement District No. 276 lying North of the Red Deer River		July 1st, 1949

The second general test is practically completed in M.D. Strathcona No. 518. M.D. Dublin No. 366 has one herd remaining to be tested, and the first general test is incomplete in M.D. Success No. 336 and M.D. Leslie No. 547.

ARTIFICIAL INSEMINATION LABORATORY, OLDS, ALBERTA

(W. H. T. Mead)

In April, 1943, the writer was delegated by the Department of Agriculture to make an investigation of the work being carried on in some other areas in connection with the artificial breeding of live stock. It was decided to visit the University of Minnesota and the Artificial Breeding Association at Neepawa, Manitoba. Approximately three weeks were spent in studying the organization of association and the technique of artificial insemination at the University of Minnesota, the Minnesota Co-operative Live Stock Breeders' Association and the Neepawa Cattle Breeders' Club.

After returning to Alberta, a detailed report of findings was made to the Department of Agriculture and to the Advisory Committee on artificial insemination.

The Advisory Committee then drafted a plan dealing with artificial breeding service for cattle, to apply to breeders of pure-bred cattle and to breeders of commercial cattle wherever the programme could be put into practical application. The plan was submitted to the Department of Agriculture for approval. Plans were drawn up for a laboratory to be constructed at the Olds School of Agriculture to serve as the headquarters for artificial insemination work, and to function as the main breeding center.

Considerable extension work was done by the writer during the summer and fall in likely areas for breeding clubs and with some breed associations. Arrangements were completed to supply ser-

vice from bulls selected by the Alberta Branch of the Holstein-Friesian Association to selected cows belonging to members of that association.

A considerable amount of organization work was done in the area adjacent to Olds, and as a result the application for a breeding club under The Co-operative Associations Act of Alberta was made in late December.

Because of the difficulty of obtaining a suitable technician, the club will probably not get started in actual breeding until some time in January, 1944. In the meantime, the further sign-up of members is being done.

The artificial insemination office and laboratory was completed in November, and after the office equipment and laboratory equipment were moved in, some preliminary work of an experimental nature was carried on, using the bulls maintained at the college farm and servicing females owned at the farm and in the vicinity of Olds. A number of cows were successfully settled, but the number is not great enough yet to draw any conclusions with regard to efficiency.

Prospects are that in 1944, upwards of 2,000 cows may be serviced from this breeding center under the present set-up, and there may be considerably more if other organizations are formed and breeding started. These cows will be serviced under breeding club conditions, and also under conditions where semen is being distributed over a large part of the Province to serve individual cows. This should prove to be a real test, and should establish a relationship between the efficiency of breeding in a club and the efficiency of making individual shipments over a greater area.

The greatest difficulty encountered in organization work so far, has been the lack of knowledge among the general farming public concerning artificial insemination. The practise is new to this Province, and it is only natural that cattle breeders want as much information as possible before signing up as members of a breeding club. However, it is felt that as the work progresses and becomes more commonly known, there may be a great demand for this service.

Insufficient breeding has been done to date to allow any quotations regarding conception rates or breeding efficiency, but what results have been obtained have been encouraging.

REPORT OF THE DAIRY COMMISSIONER

(D. H. McCallum)

A report of the Administrator of Milk Control has again been included as an appendix, and our thanks are proffered to Mr. A. T. Neale for its submission.

Additional tables, listing the dairy factories in operation during 1943, the estimated value of dairy products sold off farms, and the herds on the cow testing service, averaging over 300 pounds of butterfat, have been included to supply information to those using the report as a reference.

General Review

The outstanding features of the 1943 Report were all time records in the production of creamery butter and total value of all dairy products.

While the production of milk and dairy products did not meet the objectives set for 1943, nevertheless milk production was well maintained at the all time high levels attained during 1942. The total quantity of milk produced amounted to 1,789,338,000 pounds, which represents a decrease of .02% under the 1942 figures. There was a considerable change in the utilization of milk during the year. Larger quantities were used for the manufacture of creamery butter, ice cream, and consumed in the fresh fluid form. Less milk was utilized in the manufacture of dairy butter, factory cheese, evaporated milk, and fed to farm animals. Manufactured dairy products utilized 66.8% of the total milk supply, while 33.2% was consumed or fed in the fresh fluid form, as compared with 69.1% and 30.9% respectively for 1942.

Increased prices for certain products and the diversion of large quantities of milk from manufactured products to fluid consumption were responsible for raising the total value of all dairy products to $34,428,814 from $31,574,838 recorded during 1942. This is the highest value recorded for any year, and exceeds the 1920 total, when prices vaulted to exceptionally high levels. Farm income from the sale of milk and dairy products was, however, very much greater during 1943 than in 1920, as a result of subsidies paid by the Federal Government to encourage production. These subsidies do not appear as any part of the total value listed above, and amounted to approximately $3,103,000 during the year.

Creamery butter production amounted to 38,656,940 pounds, an increase of 4.5% over 1942, and an all time record for the Province of Alberta. Factory cheese production was rather disappointing, declining to 2,563,257 pounds from the peak production of 3,908,545 pounds established the year previous.

Conditions were favourable for dairy production during the winter and spring of 1943, but lack of normal rainfall over a large part of the Province during the pasture season resulted in a serious decline in milk flow, particularly in the south-eastern and east-central portions of the Province. During October and November, exceptionally fine weather prevailed, and milk production recovered slightly. The majority of districts report a fair amount of feed, which should maintain production during the early part of 1944.

Effect of War Measures

The continued demand for war materials has restricted the manufacture of all dairy equipment. Pasteurizers, milk and cream cans and all metal equipment were very difficult to secure. While this shortage probably did not affect production, it did create a hardship in many cases, and no doubt affected the quality of butterfat manufactured in some instances. Milking machines and power units have been in short supply. The office of the Dairy Branch assisted supply houses in arriving at a more equitable distribution of milk and cream cans.

To encourage production of essential dairy products, subsidies were paid producers of milk and butterfat. Following are the details of the amount and periods covered by the various subsidies which were in effect during 1943. Market milk for fluid distribution and consumption in all areas where milk sold over and above a definite price, received a subsidy of 25 cents per 100 pounds from January 1st to September 30th. This was increased to 55 cents per 100 pounds, commencing October 1st, in those areas recommended by the Administrator of Milk Control, Board of Public Utility Commissioners. Butterfat used in the manufacture of creamery butter received a subsidy of 10 cents per pound, January to April inclusive, and 8 cents per pound for the balance of the year. Milk used for concentrated milk products received 25 cents per 100 pounds for the months of March and April, and commencing October 1st, a subsidy of 30 cents per 100 pounds was made effective. Milk for cheese making purposes received a subsidy of 30 cents per 100 pounds as from October 1st. All subsidies which were in effect at January 1st, 1944, will continue until April 30th, 1944.

The dairy industry was subjected to certain control measures, ordered by the Wartime Prices and Trade Board. Order A-533, made effective January 1st, 1943, prohibited the transportation of unprocessed milk or cream on trucks, except by permit issued by the Administrator of Services, Wartime Prices and Trade Board. Order No. A-440 of the Wartime Prices and Trade Board, which became effective December 28th, 1942, restricted the operation of private commercial vehicles to 35 road miles from registered address of vehicle; the Administrator of Service, Wartime Prices and Trade Board, may issue permits to exceed the prescribed limit. Order in Council P.C. 7142 prohibited purchase of milk or cream from producers other than those from whom purchases were made as at September 9th, 1943; the Agricultural Food Board may issue permits to make such purchases from other producers, and this order did not apply to cream patrons from one creamery to another, nor cheese factory patrons between one cheese factory and another.

PRODUCTION AND VALUES OF DAIRY PRODUCTS

(1943)

Product	Quantity	Milk Equivalent lbs.	% of Tot. Milk	Average Unit Price	Tot. Value
Creamery Butter (lbs.)	38,656,940	904,959,000	50.6	$ .3219	$12,443,669
Farm Dairy Butter (lbs.)	9,317,000	218,111,000	12.2	.3310	3,083,927
Cheddar Cheese (lbs.)	2,563,257	28,708,500	1.6	.2310	592,112
Farm Dairy Cheese (lbs.)	229,700	2,572,500	.1	.2110	48,467
Ice Cream* (gals.)	1,150,684	18,077,000	1.0	1.1995†	1,261,057
Misc. Factory Products	.....	22,640,000	1.3	.....	1,086,373
Milk and Cream Consumed	.....	450,596,000	25.2	2.410	10,861,223
Mild Fed to Farm Animals	.....	143,674,000	8.0	1.6600	2,384,988
Skimmilk & Buttermilk (lbs.)	1,066,799,250	.....	...	.2500	2,666,998
Totals		1,789,338,000	100.0		$34,428,814

*Mix converted to Ice Cream on basis of 90% overrun.

†Average price of Ice Cream and mix per gal. at factory.

(1942)

Creamery Butter (lbs.	36,985,909	865,840,100	48.4	$ .3200	$11,835,491
Farm Dairy Butter (lbs.)	12,100,000	283,261,000	15.8	.2700	3,267,000
Cheddar Cheese (lbs.)	3,908,545	43,775,700	2.5	.2158	843,464
Farm Dairy Cheese (lbs.)	230,000	2,576,000	.1	.1958	45,034
Ice Cream and Mix* (gals.)	928,907	14,593,100	.8	1.1951	1,110,181
Misc. Factory Products	.....	26,088,800	1.5	.....	1,168,378
Milk and Cream Consumed	.....	409,862,000	22.9	2.1682	8,886,676
Milk Fed to Farm Animals	.....	143,713,000	8.0	1.4000	2,011,982
Skimmilk & Buttermilk (lbs.)	1,093,923,450	.....	....	.2200	2,406,632
Totals		1,789,709,700	100.0		$31,574,838

*The total quantity of ice cream amounted to 1,015,635 gals. when converting the mix to ice cream.

ESTIMATED VALUE OF DAIRY PRODUCTS SOLD OFF FARMS, 1943

	Quantity, lbs.	Price	Value
Butterfat for Manufacturing Purposes	32,781,326	$ .405	$13,276,437
Farm Dairy Butter Sold	2,325,000	.331	769,575
Milk for Cheesemaking and Concentrating	49,990,487	1,875	937,695
Milk and Cream Sold for Fluid Consumption	248,171,000	2.575	6,389,284
Total			$21,372,991

Values include Dominion Government Subsidies paid to producers.

Dairy Cattle

The estimate made by the Dominion Bureau of Statistics indicates that 376,000 cows and heifers over two years of age were kept for milk purposes on Alberta farms at June 1st, 1943. This represents an increase of 9,200, or 2.5%, over the 1942 totals. The average production per cow, based upon the cows kept for milk purposes according to the June census and the total milk produced, amounted to 4,759 pounds during 1943 as compared to 4,879 pounds in 1942. Assuming an average test of 3.6% of butterfat, the average production of butterfat would amount to 171.3 pounds in 1943 and 175.6 pounds in 1942. These average figures are very low when compared to countries such as New Zealand and Denmark. To place dairying in Alberta on a more permanent and profitable basis it is most necessary that the average production per cow be increased.

Creameries

There were 93 creameries in operation during 1943, which was one less than the total for 1942. Fire destroyed the creamery at St. Paul early in the season; however, a new modern plant was put into operation during July. During the year, the Central Alberta Dairy Pool purchased the Elnora and Delburne creameries from F. J. Setters of Red Deer, and also the Stettler and Ponoka plants from Burns & Co. The Vilna Creamery was purchased by J. R. Sweeney from S. Dykstra.

The average output of creamery butter per plant amounted to 415,666 pounds, the highest to be recorded, and an increase of 22,200 pounds over the previous high average output established in 1942.

Alberta Creameries in Operation During 1943.

Burns & Co., Ltd., head office, Calgary, Alberta, with branches at Camrose, Calgary, Daysland, Edmonton, Hay Lakes, Holden, Leduc, Manville, Millet, New Norway, Radway, St. Paul, Vegreville, Wetaskiwin, Westlock, Vermilion; Northern Alberta Dairy Pool, Ltd., head office, Edmonton, with branches at Andrew, Edgerton, Edmonton, Sedgewick, Wetaskiwin; Central Alberta Dairy Pool, head office, Red Deer, with branches at Alix, Bentley, Bowden, Delburne, Elnora, Ponoka, Red Deer, Stettler; United Dairies, Ltd., head office, Calgary, with branches at Calgary, Didsbury, Lethbridge, Macleod, Medicine Hat, Red Deer, Sundre; Swift Canadian Co., Ltd., head office, Edmonton, with branches at Calgary, Coronation, Edmonton, Hanna; Independent Creameries, Ltd., head office, Innisfail, with branches at Eckville, Innisfail, Lacombe, Markerville; Woodland Dairy, Ltd., head office, Edmonton, with branches at Calmar, Edmonton, New Sarepta, Tofield; Southern Alberta Dairy Pool, Ltd., Calgary, and branch at Acme. Other independently operated creameries: Athabasca Creameries, Ltd., Athabasca; Barrhead Creamery, Barrhead; Bashaw Creamery and Milling Co., Ltd., Bashaw; Bluffton Creamery, Bluffton; Bonnyville Creamery, Bonnyville; Cardston Creamery Association, Cardston; Carstairs Creamery, Carstairs; Castor Creamery, Castor; Claresholm Creamery, Claresholm; Clive Creamery, Clive; Cochrane Creamery Association, Cochrane; City Dairy Creamery, Lethbridge; Derwent Creamery, Derwent; Donalda Co-op. Creamery Association, Ltd., Donalda; Edberg Co-op. Creamery Association, Ltd., Edberg; Edmonton City Dairy, Ltd., Edmonton; Elk Point Creamery, Elk Point; Evansburg Creamery, Evansburg; Fertile Valley Creamery, Ponoka; Grande Prairie Creamery, Ltd., Grande Prairie; Grand Centre Creamery, Grand Centre; High River Creamery, High River; Jasper Dairy, Edmonton; Lac La Biche Creamery, Lac La Biche; Model Dairies, Calgary; Maple Leaf Creamery, Ltd., Calgary; Nanton Creamery, Nanton; National Food Products, Ltd., Bassano; Olds Creamery, Olds; Okotoks Creamery, Okotoks; Onoway Creamery Association, Onoway; Peace River Creamery, Peace River; Pincher Creek Creamery, Pincher Creek; Purity Dairy, Lethbridge; Rimbey Creamery, Rimbey; Rocky Mountain House Creamery, Rocky Mountain House; Sylvan Lake Creamery, Sylvan Lake; Spondin Creamery, Spondin; South Edmonton Creamery Co., Edmonton; Sangudo Creamery, Sangudo; Valhalla Co-op. Creamery Association, Ltd., Valhalla Centre; Viking Co-op. Creamery Association, Viking; Vilna Creamery, Vilna.

Cheese Factories

There were 18 cheese factories in operation during 1943, as compared with 20 for the year previous. Burns & Co., Ltd., Camrose, and the Orleans Co-op. Cheese Factory at Atmore did not manufacture cheese during the year. The Killam District Co-op. Cheese Factory operated only the first part of the year.

The production of cheese amounted to 2,563,257 pounds, a reduction of 1,345,288 pounds, or 34.4%, from the previous year.

Large quantities of milk were transferred from cheese factories to fluid milk markets in the cities of Edmonton, Calgary and Lethbridge.

The quality of cheese was well maintained, there being 81.1% first grade as compared to 81.0% for 1942. The few exhibits sent to the British Empire Cheese Exhibition at Belleville, Ontario, were successful in winning prizes.

Alberta Cheese Factories in Operation During 1943.

Burns & Co., Ltd., head office, Calgary, Alberta, with branches at Bawlf, Bruderheim, Leduc, Millet, Round Hill; Woodland Dairy, Ltd., head office, Edmonton, with branches at Glen Park and Ryley; Northern Alberta Dairy Pool, Ltd., Thorsby; Clover Leaf Cheese Co., Ltd., Calgary; Killam District Co-op. Association, Ltd., Killam; Linden Co-op. Dairy Association, Ltd., Swalwell; Mountain View Cheese Factory, Mountain View; Neapolis Co-op. Dairy Association, Ltd., Didsbury; New Coaldale Cheese Factory Co-op., Ltd., Coaldale; Raymond Co-op. Cheese Factory Association, Raymond; Ridge Valley Co-op. Association, Crooked Creek; Rosemary Co-op. Dairies Association, Ltd., Rosemary; United Irrigation District Co-op. Cheese Factory, Glenwood.

Concentrated Milk Plants

There were nine plants licensed as concentrated milk plants during 1943. One plant, the Central Alberta Dairy Pool at Red Deer, manufactured evaporated milk, while the remainder dried skim milk and buttermilk. The move to further the utilization of these by-products during recent years has been quite noticeable, and with a ready market for the products and relatively cheap fuel in Alberta, it would appear economically sound to expand this industry at points where a reasonable volume of the raw product is assured.

Alberta Concentrated Milk Plants in Operation During 1943.

Central Alberta Dairy Pool, Alix; Central Alberta Dairy Pool, Red Deer; Crystal Dairy, Ltd., Calgary; Crystal Dairy, Ltd., Didsbury; Crystal Dairy, Ltd., Medicine Hat; Edmonton City Dairy, Ltd., Edmonton; Northern Alberta Dairy Pool, Ltd., Edmonton; Woodland Dairy, Ltd., Edmonton; Woodland Dairy, Ltd., Ryley.

CREAM SUPPLY TO CREAMERIES
QUANTITY AND GRADES OF BUTTERFAT

	1943		1942		1941	
	Pounds	%	Pounds	%	Pounds	%
Cream Received	93,075,363		90,222,223		87,163,649	
Average Test		(35.2)		(35.0)		(34.6)
Butterfat:						
Table Grade	432,119	(1.3)	711,115	(2.3)	778,288	(2.6)
Special Grade	19,130,688	(58.3)	19,351,081	(61.4)	20,093,810	(66.6)
First Grade	11,660,193	(35.6)	10,228,758	(32.4)	8,369,065	(27.8)
Second Grade	1,434,666	(4.4)	1,084,455	(3.4)	749,951	(2.5)
Off Grade	123,660	(.4)	161,568	(.5)	143,639	(.5)
	32,781,326	(100.0)	31,536,977	(100.0)	30,134,753	(100.0)

A further drop in the quality of cream occurred during 1943, which is most disappointing. Undoubtedly, cream quality had a detrimental effect on butter quality. A surplus of undergrade butter early in the year had to be marketed in eastern Canada, necessitating a higher freight rate, which resulted in widening the price spread between first and second grade cream. Factors in-

fluencing the quality were labour shortages on the farms, infrequent deliveries due to truck control, a shortage of shipping cans in good condition, and another possible factor was the patrons' indifference to produce a high quality product because of the higher prices offered, and the premium paid for special grade over first grade may not have been great enough to warrant the extra care necessary to produce a top quality product.

BUTTER QUALITY
FEDERAL REPORT OF CREAMERY BUTTER GRADED

Year	Total Pounds Graded	Percentage in Each Grade			
		First	Second	Third	Below Third
1938	27,839,952	85.7	7.9	5.4	1.0
1939	27,219,976	86.9	7.0	5.4	.7
1940	27,243,216	88.1	7.1	4.4	.4
1941	32,037,992	88.4	6.9	4.1	.6
1942	33,614,392	84.1	10.2	5.0	.7
1943	35,490,784	84.9	9.2	5.5	.4

It will be noted from the above table that the quantity graded, increased by almost 2,000,000 pounds and that a higher percentage of the butter qualified for first grade as compared to 1942. Considering the numerous factors that tend to retard quality during war years, this is a most worthy achievement.

Only one exhibition, the Western Ontario Dairy Convention at London, offered classes for creamery butter. A few exhibits were sent to London from Alberta, and they were successful in winning major awards.

Services of the Dairy Branch

Inspection and Instructional Work.

In addition to their inspection duties, inspectors of the Dairy Branch made instructional work one of their main functions during 1943. Regulations respecting the weighing, testing and grading of milk and cream were well observed at all factories. There were 128,814 shipments of cream checked for grade and 39,076 samples of milk and cream check tested for butterfat content during the 2,253 visits made by the inspectors.

To assist the dairy factories in maintaining a properly trained staff, the Dairy Branch and the Dairy Department at the University of Alberta again co-operated in conducting short courses in dairy plant training. The four-week Creamery Short Course was followed by a special course of one week in Babcock testing. During the year, arrangements were made with the Dominion-Provincial War Emergency Training Programme to conduct two creamery short courses early in 1944. Both experienced and inexperienced men and women were eligible for this training and subsistence allowances, together with transportation to and from Edmonton, were assured all students accepted for training.

Regional conferences for buttermakers were held at Lethbridge, Calgary, Red Deer, Camrose and Edmonton, and a special meeting for cheesemakers was held in Edmonton. Instruction to plant workers on methods of manufacture, plant efficiency and sanitation was stressed by inspectors. Extension work through meetings, field days, radio addresses, bulletins and leaflets was carried on by members of the staff.

Cow Testing and Herd Recording.

While there were less herds and cows under test during 1943, it is most encouraging to report a substantial increase in the average milk and butterfat production per cow.

The following tabulation shows the numbers of herds and cows under test and average milk and butterfat production for those completing a lactation or an eight months' recording during the cow testing year ending October 31st, 1943. Similar figures for the previous two years have been added to facilitate comparisons.

	1943	1942	1941
Number of herds under test	128	180	187
Number of cows under test	1,600	2,052	1,974
Number of cows completing a lactation or showing an eight months' recording	1,094	1,272	922
Average production of milk	8,096	7,845	7,478
Average production of butterfat	305.4	295.6	284.8
Average test	3.77	3.77	3.81

The majority of those discontinuing the cow testing service were members of Junior Dairy Calf Clubs, who undertook this project as a club activity a few years ago, but have since joined some branch of the armed forces. Several new herds were added to the list during the year, and in spite of serious labour shortages, interest in this service has been well maintained. There was an increase of 251 pounds of milk and 9.8 pounds of butterfat per cow as compared to the figures for the year previous. The average production of these cows under test is 3,337 pounds of milk and 134.1 pounds of butterfat greater than the average of all cows in the Province, and when consideration is given to the fact that the cows under test helped to raise the average of all cows to its present level, it becomes quite apparent that many low producing cows are being kept for milk purposes.

No replacement for the cow testing supervisor was secured, which prevented periodic visits to herd owners. However, all members received detailed reports of their individual herds as compared to all herds on the service, and much useful information concerning herd management problems.

Although there were fewer cows under test, there was an increase in the number of cows qualifying for gold and red seal certificates. The following table sets forth the number of these certificates issued during the past three years:

	1943	1942	1941
Gold Seal	54	52	29
Red Seal	278	251	164
Blue Seal	428	489	322
Statements	200	236	191
Totals	960	1,028	706

The need for a list of Alberta's high producing herds, and also to stimulate greater interest by members of the cow testing service, has prompted the publishing of such information in the Annual Report. Following is a list of owners whose herds, during the year ending October 31st, 1943, averaged 300 or more pounds of butterfat. The names are listed in alphabetical order, and include only those herds with five or more cows:

HONOUR ROLL, 1943

Name	Address	No. of Cows	Av. Pounds of Butterfat
Baerg, Jacob L.	Swalwell	14	309.0
Bailey, Ward L.	Wetaskiwin	8	355.6
Bajema, Awne J.	Blackfalds	5	344.1
Bajema, Jacob A.	Blackfalds	8	312.9
Bender, Walter	Hoadley	6	505.3
Boese, Sol.	Swalwell	19	367.0
Carlyle, S. G.	North Edmonton	15	333.2
Charlton, F. A.	Bowden	5	348.4
Christensen, C. E.	Edmonton	16	334.7
Clayton, W. J.	South Edmonton	31	354.0
Cole, Roy O.	Vegreville	5	416.7
Cromie, D. J.	Picardville	6	336.1
Daly, Arnold S.	Clover Bar	17	318.2
Damron, N. T.	Bentley	7	365.6
de Veer, John	Swalwell	12	336.6
Dowdell, A. E.	Millet	9	387.3
Dowdell, W. C.	Millet	10	372.7
Erb, M. S.	South Edmonton	9	380.1
Erickson, John	Bentley	13	420.0
Faraschuk, N.	Thorsby	14	311.8
Flack, C. J.	Opal	6	345.4
Gould, S. P.	Rosalind	9	397.2
Haines, John	Millet	7	350.5
Jones, D. C.	Leduc	9	529.3
Leeson, F. W.	Didsbury	8	306.6
Moore, H. A.	Wetaskiwin	5	364.2
Morison, R. H.	Bentley	12	311.2
McGhan, Lloyd	Bremner	8	358.4
Nicholson, Hal	Manola	7	367.5
Phillips, Henry	Millet	15	329.4
Regehr, A. L.	Swalwell	19	328.4
Ritchie, John M.	South Edmonton	6	335.3
Robertson, J. G.	Camrose	12	347.9
Roth, C. C.	Rochfort Bridge	7	363.1
Schmidt, Arthur	Vegreville	6	359.7
Smith, W. M.	Didsbury	7	312.9
Stannard, G. H.	South Edmonton	21	360.6
Stannard Bros.	South Edmonton	32	376.2
Stevens, J. P.	Didsbury	15	407.5
Sturgeon, Roy W.	Lacombe	6	398.4
Symons, Frank	Wembley	7	304.0
Toews, Isaac	Swalwell	17	308.3
Von Arx, Arnold	Millet	17	317.7
Webb, Claude	Swalwell	22	309.5

Dairy Branch Laboratory.

The analytical service of the Dairy Branch Laboratory was continued along much the same lines as for the previous year, with emphasis placed on mould and yeast analysis of creamery butter. It was encouraging to find a small increase in number of butter samples submitted for analysis, as well as some improvement in sanitation as reflected in lower mould and yeast counts of the butter.

The following table indicates the trend both in the number of samples analysed and the percentage of counts in each class since the mould and yeast service was inaugurated in 1925:

Year	No. of Samples Analyzed	Excellent (0-10) %	Good (11-50) %	Fair (51-100) %	Poor (over 100) %
1925	686	3.6	12.7	12.1	71.6
1930	2,799	35.7	20.3	10.3	33.7
1935	2,177	55.4	17.9	7.7	19.0
1940	3,013	64.6	16.0	7.2	12.2
1941	3,161	63.9	17.1	7.4	11.6
1942	2,975	65.1	16.1	5.5	13.3
1943	3,056	69.2	15.1	4.6	11.1

In addition to butter analyses for moulds and yeasts, 54 creamery waters were examined to determine their suitability for creamery purposes. Where the purity of the water was found questionable, assistance was given in treating it in order to make it safe for buttermaking uses. At eight creameries where difficulties were encountered either from high mould and yeast counts of the butter or the occurrence of specific butter defects, complete bacteriological

surveys were conducted in order to discover the cause and suggest a remedy.

With the increased demand for fluid milk of high quality has come a number of requests from processing plants for assistance. During the year the laboratory examined 73 samples of milk and cream, and was often consulted on problems of a technical nature.

In addition, 131 samples of miscellaneous material was received for examination, giving a total of 3,322 samples received by the laboratory during the year.

As in previous years, the cheese factories were supplied with a pure, active cheese starter culture twice monthly. Testing solutions, chlorine stock solutions, as well as indicators, were prepared and distributed to the dairy plants. The testing of milk for butterfat, as organized under the cow testing service, was also continued, and increased as a result of more herds being placed on the mailing system.

Dairy Cost Study.

The Dairy Cost Study, being conducted by the Dominion and Provincial Departments of Agriculture, the Board of Public Utility Commissioners and the University of Alberta, has continued during the past year. Mr. H. L. Patterson, Economics Division of the Federal Department of Agriculture, is responsible for the preparation of the material found in the following report:

During 1943, records of a year's business were completed and closed on 149 farms. A sufficient number of farms were included from Lethbridge and Calgary whole milk farms and of the Red Deer condensery farms to give a good picture of those areas. A smaller group of farms were included in the Edmonton area to give a picture of the changes and problems occurring in that area. There will only be one fieldman available for the next year, so only 111 farm accounts were opened again. This will give the third year for two major Alberta wholemilk areas. There is also a small sample of the churning cream and condensery farms.

Considerable progress has been achieved on the analysis of the past year's data, and it is expected that full reports will be published during the coming year.

The purpose of the study has been:

(1) To provide information on costs of milk and cream production, and

(2) To provide information on the variations to be found in farm incomes and the reasons for that variation.

The information on cost of milk production will be useful to all who are responsible for making important decisions concerning the dairy industry. The information on farm incomes is most likely to be helpful to farm operators.

The general measure used in presenting costs of dairy production alone is the cost per pound of butterfat, and in the case of wholemilk this can readily be converted to 100 pounds of wholemilk at the standard 3.6 test by multiplication. The cost per pound of butterfat is the net cost of milk production, or the total dairy cost minus the credits to the dairy, divided by the total pounds of butterfat sold or used in the house. The credits include herd increase, skim milk and prize money.

The feeds were valued at local sale values, and represent roughly 40% to 43% of dairy cost. Labour was charged at prevailing wage rates, plus board, including operator's time, and represented from 28% to 40% of the cost. The balance consisted of hauling milk or cream, upkeep of buildings and equipment, and numerous small items such as veterinary, disinfectants, grinding grain, etc.

The measure of farm returns to the operator used to indicate the returns from all farm enterprises is called operator's labour earnings. Operator's labour earnings represents what is left for the operator's labour and management after all expenses, including interest on investment, have been deducted. It includes a credit for all products used in the house at wholesale prices and a credit for the use of the house at 8% of its value.

An example of what these measures indicate is presented from the 1941-42 crop year in Table 1. It should be noted that the year shown in Table 1 was an unusually good crop and pasture year in the Calgary area except for the inspected cream group, which are largely located in the foothills and were visited by early frosts which injured the late feed crops very seriously and required earlier feeding inside than usual. The Calgary area is subject to great variation by reason of drought, and might on occasion show results as unfavourable as this year was favourable.

TABLE No. 1—1941-42 SUMMARIES

Area	Number of Farms	Average Labour Earnings	Average Cost per lb.	Average Price Received per lb. Butterfat	Average Butterfat Produced per Cow
		$	Cents	Cents	lb.
Farms selling wholemilk:					
Edmonton Area	42	1,165	59.1	63.0	296
Calgary area	35	2,408	50.0	63.7	264
Lethbridge area	8	1,427	58.6	59.8	270
Farms selling inspected cream:					
Edmonton area	43	1,194	42.6	42.2	244
Calgary area	12	1,123	51.0	41.4	265
Farm selling churning cream:					
Edmonton to Wetaskiwin area	72	895	37.2	31.6	215
Farms selling cheese milk:					
Edmonton area	20	653	40.1	37.3	212
Rosemary and Coaldale area	51	1,078	33.8	44.6	224

The farm operators who co-operated in the study were given annual reports and a sheet summarizing their year's business operations and giving a comparison with the other dairymen. This comparison stressed the types of organization and management that give the best incomes. Great differences are to be found in farm incomes, and the analysis of the management factors affecting farm incomes should be useful to all farm operators, extension workers and others interested in rural conditions in Alberta.

In addition to the farm organization and management, there appears to be some locational or regional factors affecting success in dairying. One of the considerations favouring dairying is an abundance of moisture for growing crops. The importance of the moisture seems to be that forage crops respond more to an increase of moisture available than do grains. Table 2 gives a comparison between the irrigated farms in the Coaldale and Rosemary districts and the non-irrigated farms of the Edmonton area:

TABLE 2—AVERAGE YIELD PER ACRE OF MAJOR FEEDS USED (1941 CROP)

	Grain		Forage Crops	
	Oats	Barley	Oat Bundles	Alfalfa
	bu.	bu.	ton	ton
58 Coaldale and Rosemary Farms (irrigated)	44.3	24.7	2.40	3.0
177 Edmonton District Farms (non-irrigated)	26.8	24.2	.94	1.3

It will be noted that while grain yielded up to one-half higher on irrigated farms, the forage crops under irrigation, yielded more than double those on dry land. The year 1941 was a poor crop year in both areas, but the long-time yields would probably show the same tendency.

Since forage crops can best be utilized by the ruminants such as cattle or sheep, the advantage in producing forages would be expected to give some advantage to dairying as an enterprise. Table 3 gives the comparison of irrigated and non-irrigated farms for the 1941-42 crop year. The dairy costs include everything used in the dairy, including operator's time and interest on investment.

While prices have risen since 1941, and there are probably much higher percentage clearing costs in 1943 in both areas, the advantage would still be with the area having the most moisture. This helps to explain why the higher percentage of the northern farms on grey wooded soils were receiving their costs from the dairy as compared to the farms on black soils, in view of the fact that the grey wooded soils experienced higher precipitation and lower evaporation.

TABLE 3—RESULTS OBTAINED IN THE DAIRY ENTERPRISE

	Farms with Dairy Enterprise	
	Receiving Costs	Not Receiving Costs
Irrigated:		
Rosemary Cheese Farms	21	8
Coaldale Cheese Farms	14	7
Non-Irrigated:		
Edmonton Cheese Farms	8	12
Edmonton Churning Cream Farms	24	48

Butter Weighing.

The check weighing of butter and the issuing of weight certificates on creamery butter exported from the Province was almost doubled during 1943. Official weighers checked 10,626 boxes, representing a total of 87,399 fifty-six pound boxes covered by weight certificates. All butter sold to the Dairy Products Board required weight certificates, which necessitated appointing official weighers at certain points to prevent too great an interference with the duties of the regular inspectors.

Data

The following tables set forth the details of production for 1943 and statistical information concerning dairying in former years.

MONTHLY AVERAGE NET PRICES ESTIMATED PAID BY CREAMERIES IN ALBERTA PER POUND OF BUTTERFAT IN "SPECIAL GRADE" CREAM, F.O.B. SHIPPING POINT, FOR FOUR YEARS

	1943		1942		1941		1940	
	Cents	%	Cents	%	Cents	%	Cents	%
January	33.5	(5.1)	31.0	(4.5)	32.5	(4.5)	24.5	(4.5)
February	33.5	(5.3)	31.0	(4.6)	31.0	(4.6)	24.0	(4.7)
March	33.5	(5.8)	31.6	(5.1)	32.0	(5.1)	24.3	(5.0)
April	32.5	(7.0)	32.3	(6.3)	29.5	(6.6)	23.5	(5.9)
May	31.25	(9.8)	32.3	(9.4)	27.0	(10.9)	19.7	(9.5)
June	31.0	(13.9)	31.6	(13.4)	28.0	(14.2)	18.1	(15.8)
July	31.5	(14.1)	31.2*	(14.8)	31.0	(14.1)	17.5	(15.6)
August	31.5	(12.6)	31.2	(13.3)	34.0	(12.3)	17.1	(13.0)
September	31.5	(9.6)	32.0	(10.9)	32.5	(10.3)	17.0	(8.9)
October	31.5	(7.0)	32.7	(7.4)	29.5	(7.4)	22.3	(6.9)
November	31.5	(5.3)	33.5	(5.4)	29.5	(5.5)	26.1	(5.3)
December	31.5	(4.5)	33.8	(4.9)	30.0	(4.5)	29.3	(4.9)
The Year	31.71	(100.0)	31.94	(100.0)	30.34	(100.0)	20.75	(100.0)

*The estimated average prices paid for Special Grade butterfat during 1942 and 1943 do not include the Dominion Government Subsidy. This subsidy was 6c per lb., commencing July 6th, but was increased to 10c per lb. December 21st, 1942, and continued until April 30th, 1943, when it was reduced to 8c, effective to December 31st, 1943.

NOTE: The figures enclosed in brackets represent the monthly percentages of the cream receipts for the year.

CREAMERY BUTTER PRODUCTION

Year	Creameries	Pounds Butter	Selling Value Total	Selling Value Cents per lb.
1920	53	11,821,291	$ 6,555,509	(55.45)
1925	99	19,630,101	6,959,059	(35.45)
1930	92	17,716,744	4,968,227	(28.04)
1935	97	23,094,707	4,588,917	(19.90)
1940	95	29,796,520	6,647,604	(22.31)
1941	94	35,316,143	10,789,082	(30.55)
1942	94	36,985,909	11,835,491	(32.00)
1943	93	38,656,940	12,443,669	(32.19)

FACTORY CHEESE PRODUCTION

Year	Factories	Pounds Cheese	Selling Value Total	Selling Value Cents per lb.
1920	7	398,750	$ 110,355	(27.70)
1925	14	1,473,835	306,604	(20.80)
1930	8	1,035,352	175,392	(16.94)
1935	11	1,364,526	168,280	(12.33)
1940	18	2,705,853	385,584	(14.25)
1941	18	3,140,978	614,061	(19.55)
1942	20	3,908,545	843,464	(21.58)
1943	18	2,563,257	592,112	(23.10)

	Creamery Butter Production			Factory Cheese Production		
	1942 Pounds	1943 Pounds	†Dec. *Inc. %	Pounds 1942	Pounds 1943	†Dec. *Inc. %
January	1,645,831	1,906,370	* 15.8	245,327	137,011	† 44.2
February	1,509,812	1,901,742	* 26.0	245,837	119,177	† 51.3
March	1,883,276	2,235,601	* 18.7	293,080	151,598	† 48.3
April	2,282,898	2,680,811	* 17.4	315,419	179,132	† 43.2
May	3,385,625	3,746,253	* 10.7	443,420	258,172	† 41.8
June	5,246,459	5,505,889	* 4.9	551,044	350,625	† 36.4
July	5,546,635	5,657,591	* 2.0	500,236	352,947	† 29.4
August	4,971,299	4,886,053	† 1.7	417,284	310,176	† 25.7
September	3,981,627	3,705,052	† 7.0	317,493	237,584	† 25.2
October	2,715,281	2,662,623	† 1.9	237,848	175,217	† 26.3
November	1,902,231	1,978,970	* 4.0	189,607	143,216	† 24.5
December	1,914,935	1,789,985	† 6.5	151,950	147,802	† 2.7
	36,985,909	38,656,940	* 4.5	3,908,545	2,563,257	† 34.4

TOTAL ANNUAL VALUE OF DAIRY PRODUCTS

1900	$ 546,476	1935	$14,252,500
1910	7,855,761	1940	19,532,344
1915	15,896,586	1941	27,376,772
1920	34,000,000	1942	31,574,838
1925	23,002,000	1943	34,428,814
1930	18,675,500		

MILCH COWS

Year	Cows	Year	Cows
1901	46,101	1931	385,000
1906	101,235	1936	458,200
1911	147,687	1940	416,800
1916	277,324	1941	362,064
1921	432,838	1942	366,800
1926	436,500	1943	376,000

Appendix

Report of the Administrator of Milk Control

(A. T. Neale)

Milk Control.

The activities of the Board of Public Utility Commissioners in its jurisdiction over milk have been many and varied during the past year. The work involved in dealing with consumers' and producers' subsidies has been greatly extended, and has placed additional work on the members of the milk staff. Prior to the spring of 1943, the Wartime Prices and Trade Board had exclusive jurisdiction over milk prices and milk supply. The latter, however, was deemed to be so important that the Federal Government instituted and appointed a Federal Food Board having jurisdiction *inter alia* over milk supply, leaving jurisdiction over prices with the Wartime

Prices and Trade Board. This division of authority has resulted in additional work, mainly through correspondence with two different boards.

The Board was called twice to Ottawa in 1943 to meet with the Food Board, the Wartime Prices and Trade Board and all other milk boards throughout the Dominion. At these meetings questions of supply and price were reviewed, and decisions were reached as to future policy on these important matters.

In the early part of the year a producers' subsidy of 25c per 100 pounds was paid on certain markets and under certain conditions. This subsidy was increased to a possible maximum of 55c per 100 pounds, commencing the 1st day of October, 1943. The payment of these subsidies prevented increased prices to the individual consumer, and has assisted in the Government's efforts to avoid inflation.

The milk control boards of Manitoba, Saskatchewan and Alberta met in February and again in December, 1943, at Saskatoon, for the purpose of discussing mutual problems and difficulties and for the purpose of endeavouring to co-ordinate the principles of milk control in these three provinces. The interchange of views has facilitated a settlement of problems and the co-ordination of the policies of the three boards as far as is possible under the different Provincial statutes.

An order of the Agricultural Food Board introduced a radical change in milk control. Except in controlled areas, a shipper was free to ship to whatever plant he pleased, and shippers naturally selected the plant whose commodity resulted in the highest price to him. In Eastern Canada, in particular, this freedom allowed to the shipper led to discrimination and difficulty of supply to the varied types of milk plant. The order in question had the effect of preventing a shipper from shipping to any plant other than the plant to which he had been shipping at the end of September, 1943, without the approval of the Agricultural Food Board. The operation of this order has caused some hardship in Western Canada, and has caused delay in adjusting supply as between plants, and representations have been made to Ottawa to remove this restriction, or at least to give the milk boards in the Western Provinces greater power to deal with applications for the transfer of a shipper from one plant to another.

It may be of interest to note that consumers' subsidies are being paid to approximately 775 distributors to reimburse them for the allowance granted by them to their customers, under the consumers' subsidy order.

During the year 1943, the Board has recommended and the Wartime Prices and Trade Board has approved milk price increases on 70 markets in the Province. and the Board has recommended and the Agricultural Food Board has approved payment of the milk producers' subsidy on 50 markets in the Province.

In August, 1943, the Town of Ponoka and an area surrounding it, was declared to be a controlled area, and is now under the Board's jurisdiction, although the formal order has not yet been issued, pending the delivery of pasteurizing equipment. The need for control arose through the prevalence of Undulant Fever in the Ponoka area, which has caused serious illness to several of the inhabitants. The Board takes the view that it should not be called upon to adjudicate in matters of this kind. Dealing with Undulant

Fever is not a matter for this Board, and the Board may require to consider its position very carefully and may feel obliged to refuse such applications in future, where the only reason offered for the institution of control is the presence of Undulant Fever or other infectious disease in the milk-shed concerned.

The principal difficulty experienced by the Board in 1943 was that of supply. The accompanying tables will show the substantial increase in milk sales during the 12 month period, an increase caused partly by increased population, the presence of the army and air force and prison camps, and to a material extent by increase in purchasing power. The Board has not attempted to analyse or apportion the exact causes for these increases. Early in 1943 the Board realized that the question of supply would be its most difficult problem, and invited the milk distributors in Calgary and Edmonton and the representatives of the various shipper groups to meet the Board for a discussion of that problem. That meeting has been productive of excellent results, and while there were occasions when the supply of milk was short, no serious difficulty has occurred in any part of the Province. That happy result has been due to the co-operation of shippers and distributors alike. The distributors agreed to an upward revision of milk prices (not passed to the consumer), and on the other hand the shippers agreed to take every step in their power to increase their own individual production. It nevertheless was necessary for the Board to deviate from the principle of permitting plants to accept milk from standard inspected premises only. Carefully selected farmers whose premises were satisfactory to the health authorities, and whose premises are inspected from time to time, were licensed as temporary producers. But for this step there would, without question, have been serious milk shortages in all the principal centers. The medical health authorities have assisted the Board and the milk trade in large measure, and it is not too much to say that the co-operation of producers, distributors and the medical health officials has placed the Province of Alberta in the most favoured of any province in the Dominion of Canada, as far as milk supply is concerned.

It is perhaps proper to point out that military camps and prison camps presented a difficult problem, requiring as they did, enormous supplies of milk every day. The supply from licensed shippers and from temporary shippers was insufficient to meet this added demand, and the Board was obliged to seek assistance from cheese factories for the additional required supply. As a result, milk has been diverted to the fluid trade from cheese factories at nine points in the Province. The cheese factories have co-operated with the Board in furnishing the required additional supply, and the diversion of this milk from cheese to the fluid trade was approved by the Agricultural Food Board.

Until 1943, producer milk prices in the controlled milk-sheds have varied to some extent. There would appear to be no logical reason why this state of affairs should continue, and when the new price agreement was being negotiated by the Board between the producer-distributors and distributors, the Board seized that opportunity of levelling out prices.

The ceiling placed upon feed by the Federal authorities has had a beneficial effect in that it has kept people in the milk business who otherwise were being slowly forced out by the fluctuations and variations in feed prices.

LIBRARY OF THE UNIVERSITY OF ALBERTA

TABLE 1

PER CAPITA CONSUMPTION OF FLUID MILK, IN PINTS, MONTHLY, FOR 1943

(To include Cream Consumption Converted to Milk Equivalent)

PINTS (PER DIEM)

Area (Pints, per diem)	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Calgary	1.020	1.079	1.107	1.112	1.098	1.087	1.130	1.079	1.078	1.105	1.128	1.071
Edmonton	.982	1.073	1.137	1.167	1.168	1.180	1.159	1.155	1.186	1.136	1.178	1.167
Lethbridge	.815	.883	.902	.889	.887	.886	.947	.961	.949	.977	1.00	1.03

TABLE 2

CONSUMPTION OF FLUID MILK IN THE CITIES OF CALGARY, EDMONTON AND LETHBRIDGE, MONTHLY, 1943

Area	Jan. Qts.	Feb. Qts.	Mar. Qts.	April Qts.	May Qts.	June Qts.	July Qts.	Aug. Qts.	Sept. Qts.	Oct. Qts.	Nov. Qts.	Dec. Qts.
Calgary	1,091,492	1,050,464	1,187,947	1,173,418	1,218,355	1,171,873	1,255,871	1,183,989	1,139,699	1,220,349	1,196,036	1,136,877
Edmonton	1,152,292	1,145,464	1,311,140	1,307,014	1,349,271	1,324,154	1,352,851	1,320,755	1,303,397	1,399,823	1,416,345	1,449,483
Lethbridge	145,155	141,721	162,026	160,057	164,925	160,850	178,926	178,436	168,765	178,129	174,521	176,378

TABLE 3

CONSUMPTION OF FLUID CREAM IN THE CITIES OF CALGARY, EDMONTON AND LETHBRIDGE, MONTHLY, 1943

Area	Jan. Qts.	Feb. Qts.	Mar. Qts.	Apr. Qts.	May Qts.	June Qts.	July Qts.	Aug. Qts.	Sept. Qts.	Oct. Qts.	Nov. Qts.	Dec. Qts.
Calgary	85,206	78,446	86,617	81,654	85,004	80,987	84,678	84,171	84,207	87,874	89,393	91,059
Edmonton	91,760	88,097	105,002	102,664	106,464	102,227	102,378	107,234	109,023	122,809	122,317	128,346
Lethbridge	10,584	10,359	11,152	9,739	9,836	9,181	10,011	10,270	10,449	11,393	11,990	14,455

TABLE 4

FLUID MILK CONSUMPTION IN CITIES OF EDMONTON, CALGARY AND LETHBRIDGE, 1939-1943

Area	1939 Quarts	1940 Quarts	1941 Quarts	1942 Quarts	1943 Quarts
Calgary	8,983,853	9,364,294	10,043,712	11,967,311	14,026,370
Edmonton	10,349,471	10,381,263	10,823,425	11,763,647	15,831,989
Lethbridge	1,440,907	1,488,834	1,517,788	1,503,589	1,989,889
Totals	20,774,231	21,234,391	22,384,925	25,234,547	31,848,248

TABLE 5

FLUID CREAM CONSUMPTION IN CITIES OF EDMONTON, CALGARY AND LETHBRIDGE, 1939-1943

Area	1939 Quarts	1940 Quarts	1941 Quarts	1942 Quarts	1943 Quarts
Calgary	860,197	907,358	967,339	949,838	1,019,296
Edmonton	976,598	962,929	962,911	934,799	1,288,231
Lethbridge	93,824	101,691	104,357	117,780	129,419
Totals	1,930,619	1,971,978	2,034,607	2,002,417	2,436,946

TABLE 6

FLUID MILK PURCHASES BY CALGARY, EDMONTON AND LETHBRIDGE DISTRIBUTING PLANTS, 1939-1943

Area	1939 lbs.	1940 lbs.	1941 lbs.	1942 lbs.	1943 lbs.
Calgary	30,921,645	31,125,975	33,526,356	37,971,410	41,437,886
Edmonton	26,668,040	26,205,032	27,478,447	31,392,466	40,097,468
Lethbridge	3,204,413	2,696,664	3,986,417	*5,398,593	†11,776,105
Totals	60,794,098	60,027,671	64,991,220	74,762,469	93,311,459

*Includes milk for Airport.

†Includes milk for Airport and Prisoner of War Camps.

TABLE 7

SUMMARY OF MILK AND CREAM PRODUCERS OPERATING ON DECEMBER 31st, 1943, UNDER BOARD OF PUBLIC UTILITY COMMISSIONER'S LICENSE

Controlled Area	Milk	Cream	Total
Calgary	212	74	286
Camrose	8	5	13
Crow's Nest Pass	9	1	10
Lethbridge	36	5	41
Edmonton	223	64	287
Red Deer	21	13	34
Totals	509	162	671

TABLE 8

SUMMARY OF MILK AND CREAM DISTRIBUTORS OPERATING ON DECEMBER 31st, 1943, UNDER BOARD OF PUBLIC UTILITY COMMISSIONER'S LICENSE

Controlled Area	Milk	Cream	Total
Calgary	9	2	11
Camrose	2	....	2
Crow's Nest Pass	7	....	7
Edmonton	25	1	26
Lethbridge	4	....	4
Red Deer	4	....	4
Totals	51	3	54

TABLE 9

MILK AND CREAM PRICES EFFECTIVE JANUARY 1st, 1943, FOR ALBERTA CONTROLLED AREAS

Area	MILK		CREAM		
	Price to Producers per 100 lbs. (3.6% B.F.)	To Consumers per Quart	To Producers per lb. B.F.	To Consumers 10% Sub-standard per Pint	To Consumers 18% B.F. per Pint
Calgary	$2.60	*12	$ .45	$ .17	$ .28
Camrose	2.28	*11	.45	....	.25
Crow's Nest Pass	2.63	*12	.45	.17	.28
Edmonton	2.60	*12	.45	.17	.28
Lethbridge	2.55	*12	.45	.17	.28
Red Deer	2.28	*11	.45	....	.25
Bowden	2.28	*11	.45	....	.25

*Lawful quart price—subject to 2c per quart Consumer Subsidy authorized by Order No. 195 of The Wartime Prices and Trade Board, Ottawa, effective 16th December, 1942.

REPORT OF THE POULTRY COMMISSIONER

(C. W. Traves)

During 1943, the poultry industry of Alberta continued the upward trend of quantity, quality and value evidenced in the past six or seven years. The exceptionally long and hard winter had some retarding effect upon early egg production, but not as much as would have been the case a few years ago. An ever increasing number of our farmers are modernizing their poultry buildings and feeding and managing according to the latest information. In fact, it is surprising the number of new, modern single, double and even triple decked poultry houses that have been built in Alberta during 1943. The old saying that any phase of agriculture that is profitable will receive added attention certainly is true of the poultry industry. Although Alberta, in common with the other prairie provinces, does and will continue to receive the major portion of their poultry and poultry products from the small farm flocks, the commercial plants are becoming more numerous, and many of the small premises are being improved to such an extent that they can almost be considered as specialization on a small scale. As stated, the majority of our flocks are of the small farm type, and these flocks almost without exception are tended by the farm women. With the shortage of help, especially skilled help, our farmers, and especially the farm women, are deserving of every praise for a job well done.

The following table will give some idea of the poultry industry increase in Alberta for the past four years:

Production	1940	1941	1942	1943
Commercial Eggs	$3,878,700	$ 4,364,000	$ 6,230,000	$ 6,647,700
Hatching Eggs	100,200	115,400	165,200	205,900
Poultry Meat	3,640,000	3,750,000	5,120,000	7,480,000
Total Value	7,618,900	8,229,400	11,515,200	14,333,600

Naturally, the demand for surplus production for overseas, for the armed forces, and a greatly increased domestic market at a reasonable margin of profit proved very attractive, and as stated, was conducive to better housing, feeding and management, and these produced the desired results. During 1942, Alberta was the second province in Canada to exceed her quota of 200,000 cases for Britain. During 1943, we fell a bit short of making our export quota, but not because we did not produce more. Hardly were the quotas set than the egg ration to the armed forces and war prisoners was doubled, thus taking thousands of cases more per week from the export quotas. With purchasing power up and with a comparative scarcity and high prices for meats, eggs really came into their own on the domestic market. Although not helping export quotas, the Canadian retailers certainly did a magnificent job of selling eggs during 1943. In addition, Alberta producers had to fill a very heavy extra demand to the armed forces on the Pacific Coast and to the North, as well as to the thousands on American construction projects. Had Alberta producers only had the export quota and domestic demand to fill that the other producers had, we would have not only reached our quota, but exceeded it by at least 50%, so great was the egg production increase.

Although there wasn't any export of poultry meats, nevertheless the poultry meat prices that prevailed during 1943 kept all surpluses cleaned from the markets, and returned to the producer average to good margins of profit, depending on economy and efficiency of production.

Production Costs.

Production costs rose during 1943. While labour costs rose only moderately, the lack of experienced help and often the class of help available contributed materially to the production costs. Materials generally were very scarce, if not impossible to get, and in many instances prices for necessary materials were up. Commercial feed prices were up in most instances, but it was the increase in the grain prices that really discouraged many of our producers. Keeping in mind the fact that the vast majority of our poultry producers are on farms and that most of these grow most, if not all, of the grains used in poultry feeding, it is quite easy to understand how the increase in grain prices increased their feeding costs from 15% to 20%. Although this undoubtedly reduced profits and even caused some to give up poultry, it did not mean that there wasn't any profit to be made; in fact, the floor prices for eggs and fairly good prices for poultry meats did return a profit above the average to the economic and efficient producer.

Indications are that there will be some upward trend in the floor prices for next year, but conditions will still be such that efficiency must be kept to the fore if reasonable profits are to be made.

Egg Marketing.

Early in the year, the Regulations Respecting the Grading, Purchase and Sale of Eggs were amended and proclaimed, and a systematic survey of all probable locations for registered stations was commenced by the Dominion Department of Agriculture. At the beginning there was some opposition, but for the most part the trade really set out to do a good job of the egg business, with the result that we now have a good showing of registered stations and others that will be ready for registration early in 1944, as the following table shows:

REGISTERED STATIONS WITH METHOD OF REFRIGERATION

Mechanical	49
Ice Storages	7
Ice Bunkers	9
Basements	2
Ice-water Blower	1
Total	68

TENTATIVE REGISTERED STATIONS WITH PROPOSED METHOD OF REFRIGERATION

Mechanical	27
Ice Storages	18
Ice Bunkers	9
Basements	5
Uncertain	6
Total	65

Number of stations fully registered	68
Number of stations tentative registration	65
Number of stations not approved, no number issued	60
Total	193

This increase in country grading stations has meant that the producers are receiving faster and more efficient service close to the source of production, and the quality of that production is being maintained due to improved handling, holding and shipping conditions.

The Dominion Department of Agriculture has requested similar regulations, facilities and service for dressed poultry that we are establishing for eggs, and the majority of our present registered egg grading station operators have expressed a willingness to handle dressed poultry as afficiently as they are handling the eggs.

Undoubtedly the improved marketing conditions and the enforcing of these regulations has improved the quality of the product handled, but unfortunately the figures along these lines have never been made available to this Department.

Hatchery Approval Regulations.

The Regulations Respecting the Production and Sale of Chicks have been in need of amendment for some time, but it was hoped that a Dominion wide conference would be held to consider this matter, so that any changes made would be pretty well on a national basis. Towards the end of September such a conference was proposed, but it was not until near the close of the year that the holding of the conference in January, 1944, was definitely known.

The hatching regulations were accepted on a partial basis only during 1930, when it was decided to blood test for pullorum disease, and for the first five years this testing was confined to what were known as the Accredited Flocks Associations. In 1934, Hatchery Approval was accepted one hundred per cent, with the result that there was a very marked increase in the number of applicants for testing and the number of birds tested, as the following table shows:

Year	Method of Testing	No. of Flocks	No. of Birds	% Reaction
1930-31	Tube Agglutination	148	18,608	20.2
1931-32	" "	232	31,177	12.9
1932-33	" "	188	26,381	8.6
1933-34	" "	205	33,295	7.3
1934-35	" "	645	104,858	11.2
1935-36	" "	615	94,536	5.5
1936-37	" "	815	136,228	5.5
1937-38	" "	677	108,908	4.8
1938-39	" "	534	92,355	4.51
1939-40	Whole Blood	437	80,927	5.1
1940-41		412	91,868	2.6
1941-42	"	510	120,198	2.12
1942-43	"	460	120,841	0.35

The heavy increase in testing, resulted in more birds being tested than the hatcheries had hatching capacity to accommodate. In addition, egg and poultry prices were very low, which left the hatcheries with heavy surpluses of chicks, meaning that many flock owners found that the short time they sold hatching eggs did not justify the cost of testing, buying cockerels, etc. It will also be noted that the rush of new flocks did not help the pullorum reaction. In 1938 the flock approval and blood test requirements were raised, which meant the elimination of quite a few flocks, but it will be noted that the size of the flocks being tested has steadily increased while the incident of pullorum has decreased. In fact, the 1942-43 incident in Alberta was the lowest in Canada. Unfortunately, Alberta's method of testing (Whole Blood Agglutination) has not been fully recognized, but we have every reason to believe that next

year will see the test receive equal recognition with the Tube Test for Canada.

The hatcheries have made steady progress under the regulations, as the following table shows:

Year	Egg Setting Capacity	% of 1936	Chicks Hatched	% of 1936
1936	924,300	.....	1,028,881	.....
1937	1,036,526	112.1	1,068,056	103.8
1938	1,033,906	111.9	1,171,082	113.8
1939	1,052,759	113.9	1,394,194	135.5
1940	1,203,368	130.2	1,538,597	149.7
1941	1,269,117	137.3	1,938,052	188.4
1942	1,407,280	151.2	2,631,468	255.8
1943	1,408,070	152.3	3,607,372	350.6

It will be noted that although the war demand for chicks increased our hatchery capacity, the number of chicks sold showed more efficient use of that capacity. It would appear that we have about reached the saturation point for our hatcherey development when considered in the light of the more normal demand for chicks that is to be a natural sequence to the end of hostilities and post-war adjustment. As hatching capacity increases, obviously the necessity of providing new flocks to provide hatching eggs is essential. To this end, it is highly essential that the hatcherymen and the Government service responsible for testing of flocks co-ordinate their activities. The poultry industry is vitally affected by the conduct of the hatcherymen and the quality of the product distributed to the producers.

Alberta Hatching Egg Producers' Association.

As predicted in the 1940 Annual Report, the Alberta Association drew to the attention of the other three western provinces the fact that the hatcherymen had organized, and that producers should do the same. After some hesitation, it can now be reported that the movement spread, and that the Provinces of Saskatchewan and Manitoba have similar organizations. Undoubtedly the Alberta Association has had a stabilizing effect on the hatchery system in this Province, and we hope the same will be true of the newly-formed associations to the east of us.

Provincial Poultry Plant.

The Poultry Plant has experienced the usual labour difficulties being experienced by others, but nevertheless steady progress has been made, and each year sees the plant operating more efficiently. At a demonstration plant, it is necessary to carry some extra staff and do certain work not done on commercial farms, especially where any experimental work is carried on, with the result that such plants almost invariably show more expenditure than revenue. We are pleased to be able to report that the Provincial Poultry Plant has steadily reduced the spread between expenditure and revenue to such an extent that we can soon hope to at least "break even" and still carry on the demonstration work.

Unfortunately, the lack of experienced and technically trained help prevented our carrying on as much experimental work as hoped, but we did manage to build up the flock and to increase very considerably the sale of R.O.P. breeding males to Alberta Approved Flock owners. In addition, some poultry feeding and management experiments were carried out, chief of which was that of raising turkeys on wire porches.

The plant supplied pullets to the Olds School of Agriculture, Department of Health at Red Deer; R.C.A.F., Rivers, Manitoba; and to several other parties.

A shipment of 50 pedigreed pullets was shipped to the University of British Columbia to test out in comparison with B.C. stock under B.C. conditions. Unfortunately, the weather was very hot at the time of shipment and the pullets were a little too far advanced, resulting in 10 of them going to pieces. However, the other 40 are entered in R.O.P. at the University of British Columbia, and are holding their own in very high class competition.

REPORT OF DIRECTOR, AGRICULTURAL EXTENSION SERVICE

(R. M. Putnam)

The services rendered to the public through the Agricultural Extension Service were further augmented in 1943 through several developments.

Early in the year a Farm-for-Victory programme was launched on the suggestion of the Consultive Committee on Agricultural Services, and with the commencement of the fiscal year on April 1st, 1943, a new Dominion-Provincial Farm Labour Agreement became effective, under which the services performed by the District Agriculturists and the Farm Labour Supervisors were combined. This provided a single field force to deal not only with agricultural production, but farm labour as well.

Another development of some importance was a change in the Women's Division of the Extension Service. The term "District Home Economist" was introduced to refer to the field workers who were formerely called Lecturer-Demonstrators, and provision was made for one full-time District Home Economist on the staff. It is hoped that this may be the beginning of a comprehensive service of District Home Economists to serve the needs of the home-makers, particularly those in rural districts.

An office of Agricultural Information was also established in 1943 for the purpose of assembling essential information concerning general problems pertaining to the agricultural industry. Such topics as "The United Nations Conference on Food and Agriculture", "Power Alcohol from Grain", "Rubber from the Farm", "Hog Production Costs and Net Returns" were covered in the releases from this office.

Insufficient staff limits the work that should be performed by the Extension Service. The lack of a full-time agricultural engineer has been felt during the past few years, and particularly when the Department undertook to popularize and assist farmers to build stook sweeps as labour-saving devices. Another need is that of a Department statistician. The erection of enlarged municipal units and the probable demands for more statistical information that will be required for post-war reconstruction plans are only two of many factors which emphasize the demands for such statistical information.

The problem of reaching the public through some organized channel has been temporarily and partially met through the Farm-for-Victory programme. This programme is, however, a wartime development which will subside when its objective is achieved, leaving the fundamental problem still to be faced. The closer the method finally adopted is co-ordinated with local governing agencies, the more effective will be the service rendered to the public.

The Extension Service received valuable assistance during the year from many quarters, and to all who contributed to the work, hearty appreciation is expressed. Special mention is made of the help received from the Faculty of Agriculture of the University and the various services of the Dominion Department of Agriculture. Many

other organizations and individuals have also co-operated with the Branch during the year, and have contributed in no small measure to the success of many events.

A word of special appreciation is expressed to the press for assistance in distributing information. A conference with the executive of the Alberta Weekly Newspaper Association was held to discuss common problems.

The Department also wishes to thank all individuals and the many organizations who assisted in the Farm Labour Programme during the year, as well as the officials of National Selective Service, with whom the Department was associated under the Labour Agreement.

The staff of the Extension Service was enlarged in 1943 by the transfer of R. E. English from the Field Crops Branch to the position of Supervisor of Agricultural Information, and by the appointment of Miss E. R. Anderson as District Home Economist. Changes in the Districts Agriculturists' staff will be found in that section of this report.

Short Courses, Field Days and Agricultural Meetings.

The main activity of the Extension Branch is to distribute agricultural information. An important method for achieving this objective is through some form of gathering where farmers may discuss their problems with trained agriculturists, share their experiences and secure information. The District Agriculturists arrange a large number of meetings of various types during the year as part of the service they give to their districts. The Extension Branch assists the District Agriculturists with these meetings by providing speakers and other forms of assistance.

Despite the restrictions on travel in 1943, the number of meetings of all kinds held by District Agriculturists during the year amounted to 1,260, which were attended by 50,850 people.

During the months of February and March a series of agricultural meetings were arranged with each District Agriculturist to discuss Agricultural Engineering, Field Crops and Swine Production. A total of 128 meetings were held in this series. A similar system was followed in June, July and August for Field Days in Agricultural Engineering, when 29 field days were arranged.

Several short courses were held in February and March, among them being those at Calgary, Lethbridge, Brooks, Vermilion and Drumheller. Local organizations, such as boards of trade, agricultural societies and feeder associations, co-operated with the Department in arranging these events.

There were 27 field days organized in Alberta by the supervisors of illustration stations working out of Lethbridge, Lacombe and Scott, Saskatchewan. The Department provided assistance at most of these field days.

Other organizations, such as the Crop Testing Plan and the North-West Line Elevators' Agricultural Department, conducted a few field days in 1943.

Much of the success of meetings, field days and similar gatherings depends upon the speakers or demonstrators. For several years, Mr. F. F. Parkinson, Instructor in Mechanics at the Olds School of Agriculture, has been available to assist at field days during the summer months. During the months of February and March the

services of J. E. McLarty, of Denholm, Saskatchewan, were secured to assist at the farm machinery meetings. The Dominion Experimental Farm at Lethbridge co-operated by loaning J. J. Paterson, Agricultural Engineering Specialist, for a series of field days in June, and several members of the staff of the Department "took to the road" during the winter meetings and summer field days to carry information to the people. The need for specialists, who will be available for such activities, is quite apparent. While the officials of the various branches are eager to assist in such gatherings, their administrative duties make it very difficult for them to attend any considerable number of meetings. The Extension Service could be made much more effective if some specialists were available to assist in the dissemination of agricultural information.

Publications and Statistics.

Two types of publications are issued by the Department of Agriculture. The first and more numerous publications are the topical bulletins, leaflets, circulars and plans on subjects pertaining to Agriculture and Home Economics. The second type of publication are those issued periodically, such as the Annual Report, etc.

The total number of topical bulletins, etc., distributed during the year is estimated at 296,500, of which 81,000 were special leaflets. Each periodic publication is sent to a selected mailing list particularly interested in that release.

The following publications were printed or reprinted during 1943:

Bulletin No. 1—"Turkey Raising in Alberta" (Reprint).
Bulletin No. 11—"Planting Deciduous Trees and Shrubs" (Reprint).
Bulletin No. 12—"Planting Evergreens" (Reprint).
Circular No. 13—"Swine Paracites" (Reprint).
Bulletin No. 17—"The Value and Use of Milk" (Reprint).
Bulletin No. 19—"Variety in the Use of Vegetables" (Reprint).
Leaflet No. 25—"Pullorum Disese in Chicks" (Reprint).
Leaflet No. 27—"Poultry Farm Sanitation" (Reprint).
Leaflet No. 28—"Tuberculosis of Poultry" (Reprint).
Leaflet No. 30—"Internal Paracites of Poultry" (Reprint).
Leaflet No. 31—"Coccidiosis" (Reprint).
Leaflet No. 32—"Respiratory Diseases of Poultry" (Reprint).
Bulletin No. 35—"Beekeeping for Beginners in Alberta" (Reprint).
Leaflet No. 36—"Disorders of the Cloaca and Vent" (Reprint).
Leaflet No. 37—"Fowl Paralysis and Leukemia" (Reprint).
Leaflet No. 39—"Production of Quality Market Eggs" (Reprint).
Circular No. 42—"Control of Garden Pests in Alberta" (Reprint).
Leaflet No. 54—"Poultry Catching Crate" (Reprint).
Leaflet No. 56—"Brooding and Rearing Chicks and Poults" (Reprint).
Bulletin No. 57—"The Salad Bowl" (Reprint).
Bulletin No. 59—"The Weed Problem in Alberta" (Reprint).
Circular No. 60—"Spotlights on the School Lunch" (Reprint).
Leaflet No. 62—"The Need and Use of Commercial Protein Mineral Supplements in Poultry Feeding."
Bulletin No. 63—"The Selection and Seeding of Grasses and Legumes in Alberta."
Circular No. 64—"Stook Sweeps."
Circular No. 65—"Protect Your Sheep."
Bulletin No. 66—"Feeding and Management of Laying and Breeding Flocks."
Bulletin No. 67—"Canning for Victory."
Circular No. 68—"Rose Hips: Your Winter Source of Vitamin C."
Special Leaflts.—Honey Helping; 7 Point Milk Production Programme; Equine Ecnephalomyelitis; Wable Fly Folders.
Plans—Ventilation of Barns; Milk and Cream Cooler; Self-Feeder for Hogs (Reprint); Hog Weigher (Reprint); Self-Feeder for Swine; Combination Inside Self-Feeder for Hogs; Inside Self-Feeder for Hogs Converted from an Old Granary; Hog Watering Devices; Self-Feeder for Cattle; Stook Sweeps.

Joint Publications.—Joint Series No. 3, "Feeding and Management of Swine."
Publications issued periodically.—Department of Agricultural Annual Report (Annual); Report of Agricultural Conditions (May to Sept.) (Semi-monthly); Agricultural Notes (Weekly); Junior Form Club Bulletin (Quarterly); Faram for Victory Bulletin (Semi-monthly); Agricultural Information.

Two new periodic publications appear in the above list. Agricultural Information is a special release from the office of Information dealing with specific subjects. Its distribution is restricted to a limited number of persons particularly interested in the subjects covered. Publication of the Farm-for-Victory Bulletin was begun in June. It deals with special wartime problems of production and farm labour problems. It was issued and mailed to the members of the Farm-for-Victory committees.

The Joint Publications Committee, representing the Department of Agriculture and the University of Alberta, issued one bulletin in 1943, Joint Publication No. 3, "Feeding and Management of Swine".

The distribution of bulletins is an important method of disseminating information. During 1943, it is estimated that 5,200 letters were received for bulletins. It is felt that when a bulletin is obtained by request it will be considered of more value than if it is received automatically. The mailing list for bulletins is small, including agricultural officials, universities, and officers of various institutions and organizations.

The arrangement with the Dominion Bureau of statistics was continued in 1943. During the year, two statistical reports were published, e.g., "Gross Production for 1942" in January, and "Agricultural Statistics for Alberta" was revised in June. A number of mimeographs on special topics were also issued, and a large number of letter requesting specific information were received. One of the most pressing needs in the Department is that of a statistician.

The agricultural industry needs more information about itself. Few people realize how necessary it is to have accurate information about the industry which provides their livelihood. The need for adequate statistics will be even more essential if planning of production is to occur in the post-war years, and the organization of enlarged municipalities will necessitate revision of many statistical tables. Compiling of statistics on a municipal basis is desirable, and should be done as soon as possible after the new units are erected.

Radio.

The Department of Agriculture participated in four different radio programmes during the year as follows:

1. *Farm Radio Forum.*—The Department of Agriculture is a member of the Provincial Farm Radio Forum Committee. Through its District Agriculturists and other officers it assists in the enlarging of the listening audience for this national programme. National Farm Radio Forum is a broadcast for rural people sponsored by the Canadian Broadcasting Corporation, Canadian Federation of Agriculture and the Canadian Association on Adult Education. The programmes deal with national farm problems. It is a weekly programme through November to March.

2. *The Alberta Farm and Home Forum.*—The Alberta Farm and Home Forum was continued until June 30th, 1943, at which time it went off the air until October 1st, when the programme was re-

sumed. This programme is a joint effort between the Department of Agriculture and the University of Alberta and is meeting with a good response. It was broadcast on Monday, Wednesday and Friday from 9:00 to 9:15 p.m. over stations CKUA and CFCN. During 1943, members of the staff of the Department gave 43 ten-minute talks on the Forum, and 109 five-minute Agricultural Notes were also prepared and broadcast.

3. *The Junior Farm Forum.*—A total of 29 talks were given over the Junior Farm Forum during 1943. This weekly fifteen-minute broadcast is given primarily for the Junior Clubs, but is of interest to all rural young people.

4. Special talks were prepared and given on several subjects during the year, and radio was used for broadcasting spot announcements. From May to September, 22 talks dealing with farm labour, and known as the "Help Wanted" series, were given on an Alberta hook-up, through an arrangement between the Canadian Broadcasting Corporation and the Dominion-Provincial Farm Labour Programme. Special talks, including those on farm labour, totalled 27 during the year, and 15 spot announcements dealing with several urgent matters were also made.

Agricultural Fairs.

A total of 16 fairs were held in 1943, made up of 1 Class "A" Fair, 4 Class "B" and 11 Class "C". The list of fairs held is as follows:

Class "A"—Calgary.

Class "B"—Lloydminster, Red Deer, Vegreville, Vermilion.

Class "C"—Benalto, Didsbury, Falher-Donnelly and Girouxville, Lacombe, Lousana, Olds, Priddis-Millarville, St. Paul, Warspite-Waskatenau, Wildwood, Willingdon.

The number of entries made at these fairs was slightly lower than in 1942, but the attendance was much higher, and in the cases of some fairs the crowds reached record proportions.

Assistance was continued to the fair on the same basis as in former years.

Fairs are conducted by agricultural societies in almost all cases. Very few of these societies conduct any other activity except the fair, although the character of the organization is such as to make them potential factors of considerable importance in their respective districts. The future of the agricultural fair, as well as that of the agricultural society, is being studied in other provinces, which suggests that in Alberta those associated with this phase of agricultural activities be continually on the lookout for improvements that might be introduced and for new fields into which the society might expand for the benefit of the public.

Consultive Committee on Agricultural Services.

The Consultive Committee on Agricultural Services, whose appointment was mentioned in 1942, held a meeting early in the year to discuss many matters, including farm labour, agricultural production and the dissemination of information. At a later date the executive met to consider one or two matters pertaining to the labour situation.

At the meeting of the Committee, it was recommended that a Province-wide organization be set up to encourage agricultural production, to assist in solving the labour problem and to aid in the distribution of necessary information. A committee was appointed to carry out this recommendation. This committee set up a Farm-for-Victory Programme, under which the Province was divided into 28 zones corresponding with the District Agriculturist territory. Each zone was in turn divided into communities. Zone and community committees were selected, and the programme was begun by holding meetings of the zone committees. Later on community committee meetings were held.

Although the organization was too late to achieve much success in encouraging production in 1943, it did prove of value in the farm labour programme and as a means of distributing information. In the Fall, during the campaign to recruit men who could be spared from the farm for other essential industries, the members of the committees were kept fully informed of the policy, and were doubtless instrumental in directing many men to work elsewhere.

Distribution of a Farm-for-Victory bulletin every two weeks to all members of the committees kept them informed of latest developments and new information. Many community committees undertook projects which were of distinct advantage to the district. One committee supervised the construction of 15 stook sweeps, and several others called threshermen together to set rates and wages. The zone committees have been valuable to the District Agriculturist as a consulting body.

While Farm-for-Victory is a wartime programme, the need of having some such organization permanently connected with the agricultural extension work is felt to be desirable by many extension workers. Some tie-up among the Farm-for-Victory committees, municipal councils and the Department might be a very valuable arrangement for all.

The organization set up in 1943 is ready to function for the 1944 season.

Dominion-Provincial Farm Labour Programme.

The Dominion-Provincial Farm Labour Programme mentioned in the Annual Report of 1942 terminated on March 31st, 1943, and a new agreement for the fiscal year 1943-44 became effective immediately, under which the activities begun in 1942 were continued. Some changes were made in the method of conducting the work under the new agreement.

A committee composed of representatives of National Selective Service, farmers' organizations and the Department of Agriculture was set up to administer the terms of the agreement. The carrying out of the actual programme remained in the Extension Branch.

The 1943 agreement provided that Farm Labour Supervisors of 1942 and the permanent District Agriculturists of the Department would be combined into a single field staff, and a number of new appointments were made to bring the field staff up to 28 members. Each man was placed in charge of a district, making necessary certain alterations in the boundaries of old districts.

Closely affiliated with this field was a Province-wide organization known as the "Farm-for-Victory Programme", part of the function of which was to assist in the distribution of farm workers,

and to deal as well with other problems pertaining to farm labour. A zone committee was appointed in each of the 28 districts, and the zone in turn was divided into a number of communities, in each of which a community committee was selected. By the end of the year, approximately 200 Farm-for-Victory committees were in operation.

The following activities were undertaken under the Dominion-Provincial Farm Labour Agreement:

1. *Placement of Labour.*—During the calendar year, 5,017 persons were placed through the Dominion-Provincial Farm Labour Service. The total number of labourers requested during this period was 6,474. During the spring of 1943, assistance was provided in recruiting men to finish up harvest, and transportation was supplied for these harvesters. Throughout the summer the District Agriculturists filled requests for farm workers to the extent that labour was available, and during the latter part of the summer, plans were made to deal with the harvest labour situation. The harvest labour problem was met from local supplies and from imported labour. Over 200 farmers from the south-eastern part of the Province, where crops were poor, were recruited and given transportation to other areas. About 7,366 boys and girls from schools assisted with harvest for a period of at least two weeks between September 1st and October 10th, while a much larger number (8,765) were engaged in farm work for some period during the prolonged holiday.

No record is available of work performed by townspeople, but it is known that during the Fall a considerable number of townpeople assisted farmers with the harvest.

Imported help included 761 eastern harvesters, who came directly from Ontario to Alberta points. In addition to this number, approximately 475 Ontario harvesters came into Alberta from Manitoba and Saskatchewan when harvest was completed in those provinces. This help was most satisfactory.

About 462 farm duty soldiers were detailed to Alberta harvest fields under the policy worked out by the Department of National Defence and the Department of Labour for making available army personnel to assist with taking off the crop. On the whole, the farm duty soldiers were satisfactory workers, and did a great deal to meet the harvest labour situation.

In addition to the farm duty soldiers, slightly over 1,800 members of the Armed Services were given harvest leave. This assistance was greatly appreciated by the farmers. In areas adjacent to certain training camps, many members of the Air Force and Army spent their 48-hour leaves assisting with harvesting operations.

At Brooks and Lethbridge use was made of prisoners-of-war. In the Brooks district 100 men were placed on farms, and in the Lethbridge area between 80 and 100 men were used during the sugar beet harvest.

2. *Labour-Saving Devices* (Stook Sweeps).—In May and June of this year arrangements were made to give instructions to blacksmiths at the Olds School of Agriculture regarding construction of stook sweeps. About 20 blacksmiths took the course, and a larger number secured brief instructions. At Olds, 73 stook sweeps were built by these blacksmiths, and it is estimated that before the end

of the season 400 stook sweeps were in operation in the Province, replacing between 1,000 and 1,200 men. Bulletins and plans were provided to aid farmers in making the stook sweeps, and through the Implement Parts Distributors arrangements were made with the Steel Controller to release the necessary iron to manufacture kits, which were sold to farmers at cost, to be used in building this equipment. Approximately 200 kits were manufactured and sold.

3. *Movement of Harvesting Equipment.*—Under the Dominion-Provincial Farm Labour Agreement, funds were made available to assist harvesting units to move from areas of short crop to districts where extra aid was required. Fifteen outfits were moved. Assistance was available for approved moves of 50 miles or more, and payment was made on the basis of actual transportation cost, that is, by freight or truck, or in the case of outfits moved by road, an allowance of 30c per mile was provided.

4. *War Mobilization Board.*—One of the duties assumed under the Dominion-Provincial Farm Labour Agreement was the making of investigations for the War Mobilization Board of postponees who received postponement as being essential to agriculture. During the year 2,169 such investigations were made, and reports submitted to the Board to assist them in arriving at their final decisions.

5. *Recruiting Campaign.*—One section of the Dominion-Provincial Agreement provided that the field staff be employed when the need arose to recruit men who could be spared from farms for work in other essential industries. This campaign began during November, and every effort was made to encourage men who are not need on farm during the winter to take employment in packing plants, mines and the bush. The permits given to these men expire on March 31st, 1944, thus assuring that they would be returned to the farms in time for spring work. To the end of the year, this campaign resulted in approximately 4,500 men, who could be spared from farms, being obtained for work in other essential industries.

6. *Publicity.*—Publicity concerning projects undertaken under the agreement consists of short articles for the press, radio broadcasts, special talks, advertising, and articles in the Farm-for-Victory bulletin. In co-operation with the Canadian Broadcasting Corporation, a "Help Wanted" series was carried on an Alberta network from May until September, during which time 22 broadcasts were given.

Women's Extension Service

SUMMARY OF ACTIVITIES OF THIS BRANCH

	1940	1941	1942	1943
No. of demonstrations	282	242	268	461
Attendance	7,235	6,292	8,272	14,454
Average attendance	25.6	26	31	31.4
Field Days and Short Courses	44	24	28	33
Judges and Fairs	15	13	6	9
Applications for Women's Correspondence Courses	250	230	264	211
No. of women enrolled	4,411	4,200	4,318	3,154
Radio talks	13	4	5	10
Publications distributed	....	....	26,850	45,105
Letters requesting information	....	....	1,700	1,855
Home visits	....	188	135	267
Girls' Clubs	49	70	83	85

Demonstrations.

This year, four temporary District Home Economists and one full-time District Home Economist were assigned areas in which to

carry out the summer programme of demonstrations. The increase in the number of demonstrations given was made possible largely through the District Home Economist and another member of the staff continuing summer work into the early winter months. There are still a number of requests for these demonstrations to be met. The fact that two of the demonstrators must return to Olds for a part of the summer, limits the work they are able to do and the proper completion of the summer programme. There is a need for more winter demonstration work, as this is the time of year when rural women are free to attend meetings and carry on practical programmes. During last year, this Branch has co-operated with the Department of Public Health and the Provincial Nutrition Council in orginazing nine local Nutrition Committees in the Province and assisting these in promoting their programmes. One member also assisted in a survey on the standard of living in rural homes conducted by the Economics Division of the Marketing Service, Dominion Department of Agriculture.

Correspondence Courses.

The apparent decrease in the number of applications for correspondence courses may be accounted for by the fact that applications were sent out later than last year and all are not yet returned, and also because only one new course was offered, since both time for preparation and funds for printing were limited. The new course was titled "Homemakers' Problems in Wartime". There should be more assistance given groups taking these courses and more follow-up work done.

Publications.

One new bulletin, "Canning for Victory", and one special leaflet, "Wild Rose Hips for Vitamin C", were published. In addition, eight new mimeographed leaflets were prepared for use in answering the many inquiries for information and for demonstrations. Several other publications were revised in order that the information be kept up-to-date.

Girls' Clubs.

Girls' clubs are again carrying out projects in Home Economics. This is encouraged mainly in rural areas where no help in this regard is given through schools or other sources. They are helping to develop desirable ideals and standards of homemaking and habits of healthful living. The girls are trained in co-operative action through work and play, and community spirit and leadership are developed.

The lack of leadership in the districts is the greatest drawback in this work. If funds were available, potential leaders from the districts could be brought together at central points for leadership courses, which would provide some training.

The District Home Economist is able to give much help to the clubs by closer supervision and by giving more assistance to the leaders.

In July, a Girls' Club Week was held at the School of Agriculture at Olds, attended by 32 efficiency winners from the girls' clubs. A well rounder programme of lectures, demonstrations, sports and social activities was planned. Emphasis was placed on the part clubs could take in the war effort and the effect of wartime condi-

tions and restrictions upon the home life of the members. A display was set up by the clubs of the sewing and handicraft work during the year. This proved interesting, and showed the scope of work covered.

This Girls' Club Week was held in co-operation with the Women's Institute Girls' Clubs, who held their regular convention at this time and were represented by an equal number of girls.

It is hoped that next year a scholarship will be made available for the short course, which will assist the most efficient girls to complete a regular course at the School of Agriculture.

Outlines of the study material are provided to each club which gives them a basis for study and instruction in their work. Projects offered now consist of Good Grooming, Sewing, Home Decoration, Home Management and Foods. Handicrafts and health work are also encouraged.

The girls' clubs in the Province which are taking these projects consist of eight garden clubs, which are sponsored by the Alberta Wheat Pool. Five of these are in the Brooks district and three at Olds. These clubs at Brooks have completed their third year of garden club work, as was planned when they began their activities. The Olds clubs are finishing their work this year.

The project material is also available to all other girls' clubs interested. The largest of this group is the Women's Institute Girls' Clubs, of which about 30 are active at the present time. Besides these clubs, 44 other clubs with an average membership of 18 were given assistance in organization, provided with study material and had supervision of their work from this Department.

Summary.

The demand for women's extension work continues to increase more rapidly than staff and funds can meet. The time has come for the Department to consider the establishment of a comprehensive Women's Extension Programme by the appointment of a field staff on a permanent basis in the form of District Home Economists to serve the women of the Province. This would mean a system of extension work similar in organization to that of the District Agriculturists or, as in the U.S.A., the County Home Demonstration agents, whereby Home Economists are available to assist in all phases of homemaking.

During this war it has been recognized that women play a very important role in the economy of a country, and that it is important they be given authentic information and practical suggestions as to how they can assist in carrying out wartime programmes. It will be no less important after the war that homemakers be given direction in building up the health and vigour of the family group and generally improving their standard of living. The Department of Agriculture has justly assumed the responsibility for carrying on women's extension work since its inauguration, and should be responsible for providing adequate staff and programmes to meet the needs of women. A start in this direction was made in 1943 by the appointment of a permanent District Home Economist at Stettler, and a report of her work follows herewith:

District Home Economist at Stettler.

This work was started on May 25, and since then 55 meetings were held with a total attendance of 1,262, or an average attendance

of 23. Of these, 13 meeting were held in connection with the Stettler Health Unit. In addition, two fairs were judged. The District Home Economist was absent from his district for 1½ months, one month being given to assist in a Dominion Government survey on the standard of living in rural homes as conducted by the Economics Division of the Marketing Service, Dominion Department of Agriculture. There were 90 home visits made, 500 letters written and 20 callers at the office for information. Twelve schools in the Stettler district were assisted with their problem of serving an adequate school lunch.

Assistance is given the Health Unit on matters of nutrition in the form of home visits, meetings and articles which are prepared for their publication, "The Health Review," each time it is published.

Two circulars on timely topics were distributed to clubs and individuals in the district. It is intended that this be continued each month.

There are as yet five girls' clubs in this district, and it is planned to give them assistance in their winter programme. There will likely be more such clubs organized now that supervision for the district is provided.

The chief problem is transportation. Much more work could be accomplished if a car were available. As it is, there is wasted time in having to fit the programme into someone else's (Health Unit or District Agriculturist).

Judging from the response of the women and letters received, this service is already in popular demand and very much appreciated.

District Agriculturists

The District Agriculturist Service devoted its full effort to the production of essential agricultural products and to the farm labour problem in 1943. As a result of added responsibilities undertaken in the 1943 Dominion-Provincial Farm Labour Agreement, which became effective on April 1st, the Farm Labour Field Staff of 1942 was combined with the District Agriculturist Service, and several new appointments were made. These developments increased the number of District Agriculturists from 19 to 28 and necessitated a revision of territories. New offices were opened at Cardston, Stavely, Drumheller, Bentley, Ponoka, Vegreville, Holden and Sangudo.

The following adjustments in staff were made:

Cardston—W. R. Hanson was transferred from Stettler to Cardston.

Stavely—L. H. Perry was appointed to the Stavely office on July 19th.

Drumheller—J. F. Carmichael was appointed to the Drumheller office on May 17th.

Bentley—An office was opened at Bentley with A. W. Lampitt in charge on April 19th.

Ponoka—I. A. Coles was appointed to fill the Ponoka office on May 3rd.

Vegreville—W. N. Pidruchney, formerly District Agriculturist at Smoky Lake, was transferred to Vegreville to re-open the office which was closed in 1935.

Smoky Lake—M. D. Shemeluck was appointed to succeed W. N. Pidruchney at Smoky Lake on April 19th.

Holden—W. A. Moisey, Farm Labour Supervisor at Vermilion in 1942, was transferred to Holden as District Agriculturist on April 24th.

Sangudo—L. H. Peacock, who acted as Farm Labour Supervisor at Thorsby in 1942 was transferred as District Agriculturist to Sangudo.

Stettler—The vacancy which occurred at Stettler, when Mr. Hanson was transferred to Cardston, was filled by R. D. Price, of the Extension Service, Edmonton.

St. Paul—Paul Gibeau, Farm Labour Supervisor in Edmonton in 1942, was stationed at St. Paul as Assistant District Agriculturist.

Brooks—The retirement of M. L. Freng, District Agriculturist at Brooks and formerly of Lethbridge, occurred in June. His successor was Ira Lapp, of Redcliff, Alberta.

The McLennan office was transferred to Falher in the same district.

The opening of new offices resulted in the former territorties being reduced in size, and although each territory contains slightly above 3,000 farms, under the new plan, it is still too large a number for most effective work. In almost all phases of their activities the District Agriculturists have increased their services. Much of this has been due to the added duties imposed by the Farm Labour Programme. A closer association of the Extension Service, and particularly the District Agriculturist, with local governing agencies, such as municipal councils, would be a desirable development. There is need, too, for the District Agriculturists being provided with some information about the territories they serve. Consideration must also be given to the most desirable relationship between the District Agriculturist and the individual farmer.

The following summary indicates the services rendered by the District Agriculturists in 1943. It should be observed that the figures for 1943 include men who worked for only part of the year, as well as the full-time officials.

	1942	1943
Number of Offices	19	28
Number of Meeting Held	994	1,224
Total Attendance	47,965	49,979
Average Attendance	48	41
Number of Farms Visited	11,939	17,111
Number of Office Interviews	11,120	22,971
Number of Letters Written	15,697	30,688
Number of Bulletins Distributed	37,796	89,428
Number of Telephone Calls	10,104	18,487

Athabasca (George L. Godel).

Trends in agriculture in this district indicate curtailment in the number of cattle being milked, and some decline in the hog population.

More wheat may be sown than during the past two years. The number of haying permits obtained from the Lands and Mines office is declining, but there is a fair increase in the amount of seeded pastures and grazing leases. Egg production has gone up considerably, and a further increase of at least 20% is expected in 1944.

Considerable improvements are noticeable in farmsteads. Numerous new homes have been erected during the year. Many places are being painted, remodelled or generally improved. The more favourable financial situation of our farmers is also reflected in increased attendance at high school. There are at least 25% more pupils attending high school in the Athabasca Division than there were in 1942.

Much work was done in connection with the Forage Crop Distribution Policy during 1943. The only forage crop varieties generally know and in use in the district prior to last year were alfalfa, sweet clover and timothy. The use of sweet clover is now being discouraged in favour of altaswede, peas, alsike or alfalfa. Timothy

is recommended only for low land, and only then in cases where the farmer is prejudiced against brome. For high land, crested wheat or brome are recommended.

Live stock improvement policies, junior activities, meetings and demonstrations all received attention. The value of junior clubs is fully appreciated, but more work should be done among the women and girls of the district.

Farm Labour organizations required considerable time and energy, and the assistance of the Farm-for-Victory committee members was appreciated. There are 31 Farm-for-Victory committees in the district, 21 in the Athabasca area and 10 in the Lac La Biche area.

Bentley (A. W. Lampitt)

There is a general trend in this district towards more live stock, forage crops, special crops and minor sidelines such as bees.

The crop during 1943 was definitely below average, due to the dry weather in July and to the early frost and late spring. Seeding was also delayed on many farms in order that threshing might be completed. The district from Rocky Mountain House to Benalto was badly hailed, and hail occurred in small areas throughout the remainder of the territory.

Agents were appointed in various localities to receive orders for forage seed, and the co-operation of the elevator companies was obtained in taking orders for seed oats. There are two Dominion illustration stations in the district, and this office plans to arrange about a dozen demonstration plots in the grey soil area to show the merits of the different forage crops and fertilizers. With the co-operation of the Brooks Horticultural Station, we also expect to plant two orchards on local farms.

The mild winter resulted in a great saving in roughages, and although there was a shortage of feed grains in the hailed areas, arrangements were made to supply lower grade wheat from other points in the district. Many farmers planted cover crops. These paid good dividends, since the open Fall allowed complete utilization of the cover crops. The dairy cow population is remaining constant, but the swine population shows a slight increase over 1942. Under the Swine Improvement Policy, 55 boars were placed during 1943, and it is proposed to place several groups of pure-bred sows during the coming summer and Fall.

Thirty-nine meetings were held from May to December 31st, with a total attendance of 962. There were no field days, but two fairs in the district attracted a total of 6,000.

Berwyn (O. G. Bratvold).

As a result of the very dry year, crops in 1943 were light and patchy. Oats and barley suffered most. Average yields were approximately; wheat 25, oats 40, barley 30, flax 8.

In live stock production, 1943 has been a record year. It has been the policy of this office to promote increased live stock production, with better feeding and management practices. Considerable time has been spent in this effort. Farmers had gone into hog production on a large scale, but it is apparent from the disease and general unthriftiness that many of these farmers were not prepared to produce hogs on this scale. Live stock went into winter in fair

condition despite a dry summer and shortage of pasture. Feed will be short, particularly forage. Many farmers have only straw and grain with which to put their stock through the winter. The horse business is at its lowest ebb. Beef cattle are on the increase, but sheep are slightly decreased. Dairying is of little importance in this area, due to distance from any large centre of population.

This office devoted considerable time to the promotion of forage crops production. Varieties of forage crops grown in this area are limited to alfalfa (Grimm), brome, sweet clover, and timothy. The acreage of these crops is not as high as is desirable. Three demonstration plots were established in the district for the purpose of illustrating cultural methods, use of fertilizers and for material for field days. The response to this work was satisfactory. Farmers showed a keen interest in the results of the plots.

Although farmers are feeling the pinch of labour shortage, very little land was idle during the year. Full use has been made of modern machinery and labour-saving devices, with the result that the farmers were able to get by.

Brooks (Ira Lapp).

An increased number of feed lots were brought into operation in 1943, and there are many beef cattle on feed at present throughout the district. A marked increase is shown in the number and acreage of specialized crops such as beet, onion and radish seed. Approximately 5,500 acres of peas were seeded in the Eastern Irrigation District in 1943. A tow factory at Rolling Hills has manufactured about 120 tons of tow from flax straw.

In this area, 1943 was the driest for a number of years. There was no growth on unirrigated grassland. Some crops under the ditch suffered from lack of water due to shortage of labour to apply the water.

Due to the drought, the yield of cereals in the irrigated districts was about 65% of 1942. It is estimated that from 3% to 4% of the farmers sow registered seed. Trebi barley is grown extensively, and there are many enquiries for Newal. Alfalfa, sweet clover, alsike, crested wheat and brome are the forage crops grown in this district. Considerable interest is shown in altaswede. Brome and crested wheat grass are very satisfactory when seeded on irrigation ditch banks for the control of weeds.

Approximately 10,000 horses have been shipped from this area to the United States for canning purposes at from 1¼ to 1½ cents per pound. Beef and dairy cattle are in very good condition, due to the exceptionally mild Fall. The number of sheep is estimated at 60,322. Many sheep and lambs are on feed lots at this time. Some decrease in hog production is anticipated. About 1,200 cattle were treated for warble fly last spring, and plans are being made to treat 10,000 head during the spring of 1944.

Junior activities include four grain clubs with a total membership of 84; two potato clubs with a membership of 28; three live stock clubs with a total membership of 73 members; two poultry clubs and four girls' garden clubs.

Calgary (B. J. Whitbread)

All agricultural activities within this area were maintained at high efficiency during the year. The chief expansion was in live stock production. Field crops were at about the same levels as

for 1942. Flax was noticeably increased with satisfactory results to farmers.

The season was favourable throughout, conducive to getting the crop seeded and maintaining live stock. The spring was cold and growth slow. In the most westerly parts of the territory some frost damage was done, both late in spring to vegetables and in early Fall to cereal crops. For the most part, crops of high quality were harvested within the territory with yields being highest in the western central section and lightest in the most eastern parts.

Harvesting conditions both of hay and cereals were excellent. There were no prolonged delays due to wet weather. The quality of hay stacked is above average this year. The yields of late seeded greenfeed were light, and cover crops were not of the usual luscious growth, since there were no harvest rains to sustain their growth.

This office maintained close touch with all farming enterprises covering crops and live stock, and in addition, took an active part in placement of labour, particularly during harvest, from all sources available. Stook sweeps were promoted and assistance given with harvesting machinery transfers.

All grain and live stock club work was maintained, regardless of the stress of times and reduced numbers in membership. All Government policies for seed, grain, forage crops and live stock improvement were constantly promoted. Meetings and field days whenever possible were held, and publicity given to the Farm-for-Victory programme. Literature was continually sent to all Farm-for-Victory committees in the two zones of Nanton and Calgary, until the Provincial Secretary was appointed. The main object has been to maintain all services established and to promote others as they appear warranted.

Camrose (J. L. Kerns)

More land was brought under cultivation in 1943 due to brush clearing outfits, but more land is also being seeded to grass and a general shift back to cattle is in evidence. There is a gradual incorporation of land into larger farms. Many farms are changing hands as a result of older people selling out. There was not as much land summerfallowed as in 1942. More grasses and clover were seeded, and more coarse grains were grown in 1943 than ever before.

Production of cereals and hay was above normal, although there was much frozen grain. Grain clubs and private farmers used more registered seed this year than ever before. Good seed is scarce. The early varieties were satisfactory, but late varieties were frozen. One farm raised 3,000 bushels of registered flax.

Among forage crops, Grimm alfalfa and brome are most prevalent, although crested wheat grass, sweet clover, alsike red top and some creeping red fescue were seeded. Because of the large dairy industry in this area, alfalfa and brome are very important.

The long open Fall was very favourable for live stock, and supplies of both pasture and grain were ample. Cattle sales are being held back, due to the open Fall. Prices for milk cows at sales were lower than the 1942 average. Holsteins are very much in demand. Several new herds of Herefords and Shorthorns are starting. Horse prices at local sales were very low, and in some

cases could not even be sold. There was less hog sickness than in 1942, but an increase in prevalence of shipping fever was noted in feeder cattle.

Extension activities included 74 meetings, 5 field days, 779 farm visits made, and 2,411 bulletins and circulars distributed.

Cardston (W. R. Hanson).

The extension programme for the year centred around two main enterprises. The eastern half of the territory is a highly mechanized wheat growing area, which has turned to swine production as a means of using up surplus wheat. In the western part, diversified farming is followed. The main theme was labour conservation and improvement. In the eastern section, stress was placed upon proper use and care of machinery and better management of hogs. In the western area, the use of labour-saving devices was stressed, and improvement of the live stock industry through establishing hay and pasture fields of better quality as well as quantity, as the very basis of the live stock industry.

This territory experienced an unusual season. The spring was cold and backward, with late frosts occurring, but the actual precipitation was below normal. The summer was cool but dry, with no rains occurring in many sections. Crops matured early, and the dry Fall allowed for a very early harvest in spite of the late spring. In the eastern parts there was insufficient moisture to cause any appreciable growth of native grasses, and the cereals yielded a light crop. Further west, conditions were better. Pasture and hay crops made very good growth in the cool stormy spring. Field crops did less favourably. Seeding was very late, and cultivation for weed destruction was hampered. Crops were weedy, and only fair to poor in yield. The Fall and winter have been mild and dry. The soil moisture reserves are practically nil.

The live stock industry in this territory has always been of importance, but this year increased interest was evident. Ranch sheep raising is undergoing little change, but the number of farm flocks is on the increase. The beef cattle industry has thrived during recent years. This year many commercial ranchers have found themselves with more money than usual, and have purchased some fine pure-bred breeding stock. The quality of beef cattle is improving.

Drumheller (J. F. Carmichael).

Programmes conducted by this office may be classed under farm labour and extension. The first class includes organization and supervision of Farm-forVictory committees, each with its labour contact man. Extension programmes include farm visits to investigate and discuss agricultural problems; distribution of agricultural publications and information; organization and supervision of junior clubs; arranging for various types of agricultural meetings, short courses, field days and fairs; and the preparation and delivery of addresses.

The 1943 growing season was quite favourable to wheat production on all gumbo soils in the district. On the lighter soils, the rainfall was inadequate for cereal production. Rainfall at Drumheller was only one-half of that of the previous season. Moisture reserves from winter snows, coupled with absence of extreme heat during the summer, proved to be sufficient for excellent crops of

good quality on the gumbo soil. Hail caused considerable damage in some areas, but frost damage was comparative slight.

The season was quite favourable to live stock production, and the feed supply was excellent. Both beef and dairy cattle production is increasing, especially beef cattle. Sheep production is expected to remain steady, although several farmers are ceasing sheep raising because of losses caused by coyotes. Swine production is being reduced.

In order to assist in handling the labour problems during the busy seasons, nine Farm-for-Victory committees were organized in the district. Each had its labour contact man to take farmers' applications for help, and to distribute labour supplies. Attempts have been made to utilize more efficiently the labour in various conscientious objectors' camps and colonies.

Edmonton (F. N. Miller).

Unfavourable spring weather with continued damp and cold retarded the growth of most crops. In addition, there was considerable grain in the stook which had not been threshed in 1942. These two conditions resulted in more land being set aside for fallow and in delaying crop maturity by about two weeks. Precipitation was abundant throughout the area. Particularly favourable Fall weather permitted the harvest being done with a minimum of difficulty. Oats were heavily lodged in many instances, and presented some difficulty and delay in cutting. Oats yielded from 45 to 50 bushels per acre, barley approximately 30 bushels per acre, and wheat from 25 to 30 bushels per acre.

There is an ample supply of feed of both roughages and coarse grains in the Edmonton district. Some difficulty was experienced during the haying season because of intermittent showers, coupled with the shortage of farm labour. With the advent of all types of sweeps and loaders, the work was done efficiently and in a relatively short time. Stook sweeps were used extensively for threshing.

Extension activities from this office were carried on during 1943 with the particular aim of meeting wartime production needs. Considerable time was spent at agricultural meetings in discussing various labour-saving devices. Every effort was made to encourage farmers to improve their agricultural practices in order to control weeds. More abundant use of forage crops, wider and wiser use of fertilizers, and a more definitely planned rotation were all recommended.

There is room for tremendous improvement in the use of good breeding stock. Live stock improvement policies have been widely advocated from this office. Every effort was made to stem the rising tide of uneasiness with respect to the hog situation, and those farmers who did not deplete their breeding stock too extensively, now have reason to feel easier about the whole situation.

Falher (Euclide Hebert).

Acreage sown to wheat continues to decline in this area, but a corresponding increase is noted in coarse grains and forage crops for seed. Flax acreage has also decreased. There was a slight increase in cattle production, but no change in sheep population. Market hogs increased considerably until the bonus on coarse grains was announced. Beekeepers are becoming more numerous.

There was a distinct shortage of water for stock in nearly all parts of this district, and as a result of the dry summer much of the breeding stock had to be marketed. Weather conditions were favourable for the summer and fall harvests, but the distribution of rainfall for the spring and summer crops was low, and resulted in lower yields generally.

Due to drought, the yields of cereals were low. Wheat yielded around 18 bushels to the acre, oats 35, barley 25, and flax 9. There is an increased interested in seed improvement, and eight farmers this year were started in the production of registered or certified seed. The growing of forage crops for seed has become of major importance in this area. The soil is of the right type, and climatic conditions are excellent for the setting of seed. In favourable years the yields of alfalfa and clover are above the average for the Province.

Beef and dairy cattle are both on the increase. The Shorthorn breed is becoming very popular, although Herefords and Aberdeen Angus are holding their own. Dairy cattle are found on only a few farms. There is a tendency towards an increase in dairying, but the water problem has been a definite and serious limiting factor.

Grande Prairie (W. S. Scarth).

Seeding was late due to backward weather, and prolonged cold spells delayed early growth. However, early summer rains brought crops along satisfactorily until a hot dry spell in July. This was responsible for a very patchy crop, coarse grains suffering most severely. The Sexsmith and Spirit River areas harvested excellent crops, but hard frosts in early September damaged oat crops in the vicinity of Hythe, Valhalla and Beaverlodge. Harvest weather was excellent, with practically no appreciable rainfall from August until freeze-up. This long, dry spell brought about an acute shortage of farm water supply, particularly in those areas dependent on dug-outs and dams for water storage. Average estimated yields for the district were: wheat 20 bushels, oats 40 bushels, barley 28 bushels, flax 10 bushels. There was a decrease in flax acreage. Seed production of forage crops continue to increase, but severe September frosts did very serious damage to alfalfa seed stands. The combine is being used more extensively in harvesting forage seed.

There are plantiful supplies of feed in most areas. The water shortage is a serious factor, and has forced many to reduce live stock holdings. Apart from this, the season has been very favourable to live stock production, with long open Fall weather and mild winter weather until Christmas. Twelve bulls were placed in the district under the Bull Exchange Policy, and assistance given in placing 10 other bulls. Nine applications went through this office for boars under the Swine Improvement Policy, and assistance was given in the placing of 20 other pure-bred boars and 40 bacon type sows. The Federal Ram Club Policy is used extensively in this district. Five club rams were brought in and one ram placed on the Loan Policy. Assistance was given in purchasing and exchanging eight other rams and 60 ewes.

Holden (W. A. Moisey).

The early spring thaw made conditions favourable for threshing of the 1942 crop left in stooks. The seeding season was very favourable. The rains of late May and early June afforded excellent

growing conditions. Lack of rain in late summer enabled farmers to harvest and thresh the crops without interruption.

During the year a noticeable trend was apparent in the utilization of land, especially in the eastern part of the district. Much land was left uncultivated due to lack of labour, late spring operations and to reduction of wheat acreage. Acreages of barley and oats were increased. Wheat acreage was reduced by 20%. Alfalfa and brome are the main forage crops in the area extending from Cooking Lake to Ryley and in the Viking postal district. In the Holden, Bruce, Phillips, Kinsella and Jarrow districts forage crops are not grown to any extent. The one way tiller is being used extensively in this area as a weed control measure, but there is still a tendency to plow summerfallow too late, thereby enabling the early weeds to produce seed.

There is plenty of good green straw, hay, greenfeed and grains for live stock. The pastures during the latter part of the summer were inadequate due to lack of rain. Many cattle lost weight and flesh. However, the mild winter proved beneficial to stock. A decrease is evident in the horse population. The beef cattle situation is stationary. Dairying was extensive. Swine raising reached the highest peak to date, although there was a tendency among farmers to market over-weight hogs. The Feeders' Association and farmer feed lots are operating in the Tofield area. The feed lot activities are centred in this area due to the prominent feeder, Mr. Chas. Kallal, who has made an outstanding success of this activity. Many neighboring farmers are now adopting this method.

Hughenden (T. W. Townley-Smith).

Changes in agricultural trends in this district in 1943 were not exceptionally pronounced. Most important was the gradual and general increase in live stock, particularly swine production.

The season was one which caused considerable delay in the carrying out of usual farm operations. Heavy snow and cold weather following the early close in from the preceding year were a cause of additional hardship to the live stock feeder, as well as to the live stock. Threshing was carried out in this district in every month from April to December inclusive, and this in turn disrupted usual farm procedure. Large acreages were seeded unseasonably late with resultant delay in the current harvest. Frost damage in these late fields, particularly of coarse grains in the northern half of the territory, will lead to some difficulties in seed supply for the coming year. Showery weather during August caused some heavy losses of native hay, although tame hay crops were garnered in good condition. Though good weather prevailed for early harvest, much crop in the Edgerton-Irma districts stood out until November, and was threshed either tough or damp. Lack of snowfall, while permitting extra Fall grazing, has allowed evaporation of part of the soil moisture. Precipitation in the last six months of the year was light.

Continuation of programmes designed to foster soil conservation through general educational work, departmental policies, and to a limited extent through Junior Clubs, provided the basis of the work conducted from this office. Emphasis on the place of adapted forage crops and on further increases in live stock production, both correlated with efficiency of production, was given throughout the year.

Lethbridge (S. S. Graham).

The 1943 season has been marked by the abnormally light rainfall, totalling only 12.29 inches for the whole of the year. The total for the five month growing season from April 1st to August 31st was 5.74 inches. Harvesting conditions were ideal, and all harvesting was cleaned up in record time.

There was a slight increase in the area of land cultivated in 1943, and very little uncultivated land was observed. There was some breaking of sod. Community pastures are growing in importance with one large community pasture established in the Vauxhall district. Crop yields were greatly reduced, being estimated at full 30% less than 1942 yields. This was due chiefly to the extremely dry summer. Crop yields were reduced sharply in irrigated areas due to the extreme dry weather and lack of sufficient labour to irrigate the crops as often as needed. A wide variety of forage crops are grown in the irrigated district, but alfalfa is still the most important. An increased acreage has been planted in 1943 to pasture mixtures. Approximately 30,000 acres of sugar beets were sown this year, an increase of 2,000 acres over 1942. Yields were very disappointing, averaging only 10.2 tons per acre, with the sugar yield slightly below that of 1942 of 17.95%.

Live stock has been in excellent condition throughout the year. Feed supplies were adequate in the spring of 1943, with pastures becoming extremely dry in the late part of the summer. The long fall enable live stock to obtain fullest benefits from pastures and stubble fields. Horses are continuing to be pushed into the background, with few markets available for work horses. Beef cattle have increased in numbers, with an improvement of quality in evidence. Feeder cattle went into the feed lots in good condition. Dairy cattle and sheep have increased in numbers. Peak production of swine occurred in 1943, but a drop in 1944 production is indicated.

Olds (Hugh McPhail).

No pronounced change was noted in agriculture in this district during 1943, but more live stock has been produced than in any previous year. There is a gradual swing to mixed farming in parts where previously grain growing was mainly followed. With this, there has been an increase in acreage devoted to legumes and grasses.

The early part of the spring and summer was cloudy, and there was little evaporation. Much of the 1942 crop had to be threshed this spring, and this put all seeding behind schedule. Maturing of crops was also rather uneven. There was frost damage in every part of the district, but it was most severe in the western part. This has lowered the quality of the feed, and seed will be scarce. In spite of the frost, yields, except in the west, were fair to good. The harvesting and threshing season was satisfactory, and as it was later than in southern and eastern parts of the Province, much harvest help was transferred in time to prevent a recurrence of the serious situation of last year.

For several years there has been a definite trend towards more grasses and legumes, and recently more coarse grains than wheat have been grown. Summerfallowing, strip farming, and cover crop are all being employed as conservation practices, but there is considerable variation on different farms in the efficiency of the appli-

cation of conservation methods. Crop production was considerably lower than last year, but crops were threshed in good condition.

The fall and winter were excellent, and stock are in fine condition. Feed supplies are plentiful, but in some localities frost has lowered the feed value and supplements will be needed. Dairying is increasing in importance, although it has been important in this district for a long time. The artificial breeding now being undertaken will greatly improve the Holsteins in the area adjacent to Olds, and will have the effect of making this even more the predominant dairy breed in this district.

Ponoka (I. A. Coles).

The greatest change in this district in 1943 was the increase in acreage sown to coarse grains and the decrease in wheat acreage. Very little flax was grown, and summerfallow acreage was increased considerably. An increased interest in the growing of forage crops is evident. Seeding operations were delayed due to the large amount of the 1942 crop which remained to be threshed in the spring of 1943. Cool weather predominated during the growing season, with the exception of a short period in midsummer. There was considerable frost damage, particularly on the west side of the district. Harvest weather was almost ideal, and allowed farmers to complete harvesting in spite of the late season and labour shortage.

Due to late seeding and cool weather, which retarded growth, cereal crops were not sufficiently mature to escape damage by frosts, except on some of the higher land. Frost was mainly responsible for lower yields of low grade cereal grains. Some seed improvement is attained through distribution of seed grown by Junior Crop Clubs. There are a few farmers in the district who grow small amounts of registered and certified seed for local distribution. The importance of forage crops in this area cannot be too greatly emphasized. They not only promote a more permanent agriculture through soil improvement, but provide valuable feed stocks which are necessary, particularly in the eastern part of this district, due to large numbers of live stock.

In spite of the long 1942-43 winter with heavy snowfall, feed supplies were plentiful, and live stock came through the winter in fairly good condition. The number of beef cattle is increasing. Some breeders have taken advantage of the good prices to reduce their herds, while several farmers have profited from these sales by obtaining pure-bred foundation stock. Dairying in this district provides a considerable part of the farm income.

Red Deer (J. E. Birdsall).

There was a pronounced reduction in wheat acreage this year. Most of the acreage under cultivation was seeded to barley and oats, barley being the main crop. Flax acreage remained at about the same level as that sown in 1942. The acreage sown to forage crops was somewhat larger than usual. Seeding was delayed by spring threshing, since 40 to 50% of the 1942 crop remained in the stook over winter. Following a warm spell towards the end of April, May and June were extremely cool months and growth was retarded. July was warm, with little precipitation. Damaging frosts were recorded in both July and August. Hail did considerable damage in some sections, but was not widespread. The harvest

season was characterized by dry, warm weather. There was little snow and no sub-zero weather until Christmas.

Production of cereals was below average as a result of later seeding and unfavourable conditions. Harvest was late. Crops were light and uneven. Since this is predominantly a mixed farming area, forage crops are of paramount importance. As a step towards dealing with new weeds, preliminary arrangements have been made for the establishment of a weed control farm in the Red Deer district. This is a co-operative project, with the Lacombe Experimental Farm, the Alberta Field Crops Branch and the municipality participating.

The early months of 1943 were very cold, and snow was plentiful. Large quantities of feed were fed, but supplies were ample to meet needs. Pastures were reasonably good during the summer. Cover crops were seeded for Fall pasture to a greater extent than ever before, and proved a real boon. There is not much change in the horse situation, and although a number of new herds of beef cattle have been started, the population has not increased materially. Farmers have taken advantage of more prosperous times to invest in good breeding stock. As a result the labour shortage and retirement of some of the older farmers, a number of dairy herds have been disposed of during the year.

Sangudo (L. H. Peacock).

To a limited extent, land for pasture in this district is increasing at the expense of grain crops. More land is gradually being broken and brought under cultivation. Yields from cereal crops were considerably below average in 1943 due to excessive moisture, cool weather, late crops and frost damage. On the marginal areas of the gray wooded soils legumes are of great importance, and the use of these crops as a means of soil conservation is on the increase.

The season has been very satisfactory for live stock, and feed supplies were ample. Due to the trend towards power farming, there is little done to promote horse improvement. There are several fairly extensive beef cattle herds in the district. Numbers are increasing and quality improving. Dairying is not extensive, and improvement is slow. There are very few dairy herds in this territory. Swine raising forms an important branch of agricultural activity, and in general the quality of hogs is good. Few sheep are raised in the district.

Poultry production and conditions have been normal, with very slight change in production. In a few areas beekeeping is an important industry, and an increase in the number of beekeepers in 1944 is expected. Production during 1943 was small due to unfavourable seasonal conditions.

There are three Junior Clubs in operation: one feed barley club with 15 members, one forage crops club with 14 members, and one beef calf feeding club with 19 members.

Smoky Lake (M. D. Shemeluck).

The Smoky Lake district is experiencing a noticeable change in agriculture. Less wheat is being produced and more coarse grains grown as feed for the increasing numbers of cattle and hogs. Many farmers devote much of their time to stock feeding and dairying.

The 1943 growing season started rather late, with cool weather and heavy frosts prevailing until the middle of May. The mid-

summer precipitation was above average, and difficulty was experienced with haying operations. Harvest weather was fairly good. There was no killing frost until September 7th, and this enabled nearly all the late crops to mature. The crop yield was above average in many localities, and the grade of coarse grains was generally good. The grades of wheat were low as a result of uneven ripening.

The activities of this office have been directed towards improvement of the soil, crops and live stock in the district. The introduction of forage crops for feed and as a means of soil improvement has been strongly advocated. Better crops are encouraged by the use of high quality seed both by farmers and through the Junior Grain Clubs. Assistance in the purchase of high quality animals is given both to individual farmers and to Junior Live Stock Clubs.

Both beef and dairy cattle are on the increase. The number of beef cattle is 10% to 15% greater than last year. Dairy cows increased by 15% to 20%. Several farmers have started to keep sheep this year, and those who were previously engaged in sheep raising have increased their holdings by 10% to 20%.

A lively interest in bees was shown during 1943. There are approximately 350 beekeepers in this area. Some are well established with 60 to 75 hives, but most of them have started recently with one or two hives.

Stavely (L. H. Perry).

In all sections of this area the growing season was abnormally dry. Complete absence of moisture was noted in some areas from mid-June until harvest. Abundant moisture reserves were responsible for maintaining reasonably productive levels. Harvest was early and conditions excellent. Hail damage was confined largely to one area.

Every effort was made to induce farmers to maintain hog production. A number of meetings were held to discuss management and disease problems, and personal contacts made. In response to enquiries for combine assistance during harvest, contacts were established in areas where yields were much reduced and machines plentiful, and were referred to areas where there was a definite demand for their services. Several applications for assistance to facilitate moves were received and recommended when justified.

Soil conservation practices are limited, but two main methods of erosion control are practised. Cover crops are limited largely to the western section, where the land is heavier and rainfall more abundant. Strip farming is favoured in areas of limited rainfall. This practice is reasonably effective, but increases the difficulty of sawfly control in areas badly infested with this pest. Attempts to correct the true cause of erosion by re-establishment of fibre have been neglected. Surface cultivation in attempts to retain a trash cover is widely practised in the entire area. Mouldboard plows have been abandoned in most areas.

Production of cereal crops was extremely variable. Quality of wheat was good. Coarse grains were to good, but badly frozen in the north-eastern sector.

Live stock men have been exceptionally fortunate to date. Many report feed stocks entirely untapped, and a carryover of feeds is anticipated. Many are dependent on cover crops and stubble

feeding, and weather conditions have been ideal for the use of same to full advantage.

Stettler (R. D. Price).

The wet spring, together with a considerable amount of unfinished threshing from the previous year, retarded seeding and all crops were late. Hail damage was experienced in most of the district, and was severe in the south-eastern section. Damage varied from 5% to 100%.

Considerable time was spent with the Juniors in organizing, inspecting and supervising calf, swine and grain clubs. The improvement of live stock through the use of pure-bred sires, the culling of breeding stock, and better feed and management practices were encouraged. Crop improvement by the use of pure seed, eradication of weeds and better soil management also received attention. Swin production, from the standpoint of quality, feeding, management and control of disease has been an important phase of the work.

The soil problem will require more and more attention. Crop rotations, employing the use of grasses and legumes, must be stressed if soil fertility is to be maintained. During the past year a detailed soil survey of the entire district was completed, and should assist in developing a sound soil programme.

There was a general reduction in the areas sown to wheat, with a corresponding increase in oats, barley, flax and forage crops. Yields were lower than anticipated, but were slightly above the long time average for the district. Grades were lowered by frost. Junior Clubs have done much to improve the quality of seed in the district, the members selling surplus supplies to their neighbours. During the past few years more attention has been given to forage crops, and a large acreage of older land has been seeded down for hay and pasture.

Live stock recovered rapidly from the long severe winter, and were in good condition all summer. Reserve supplies of hay and grain were sufficient for all classes of live stock during the winter. Beef cattle herds have been increased, and there has been a strong demand for dairy cattle. The swine population reached its peak in 1943, but a number of farmers with no previous experience and no accommodation went into the hog business. In many cases the results were disappointing. Disease and internal parasites have been a serious problem, and the services of the Provincial Veterinarian were used to advantage on several occasions.

St. Paul (J. M. Fontaine).

The farmers in this territory are becoming more conscious of the necessity of mixed farming in the stabilization of agriculture. Weather conditions in the summer of 1943 were not good. Haying was difficult, due to heavy and persistent rains. Shortage of farm labour was also responsible for some damage and loss to the hay crops. Harvesting of cereals was completed on time. Alfalfa seed growers experienced some difficulty in combining their alfalfa seed as a result of snowy weather.

A marked improvement is noticeable in land utilization throughout the district, especially in the Bonnyville area, where the Forage Crop Policy has been adopted and appreciated since 1938. Wild pastures are being replaced by seeded pastures, and tame hay is quickly replacing slough hay on a large number of farms. Alfalfa

seed grown in this district in 1943 amounted to approximately 200,000 lbs. Other forage crop seed included 50,000 lbs. of sweet clover and 10,000 lbs. of alsike and red clover.

The average yields for major field crops in 1943 were: wheat 25, oats 40, barley 27, flax 8, peas 20. This compares favourably with last year. In the spring of 1943, 42,000 bushels of No. 1 certified seed oats were ordered through this office, and although the district was severely hit by frost in the Fall of 1942, a large part of the interest in good seed must be credited to demonstration of results obtained by farmers who had previously used registered or certified seed.

Among areas in this Province where live stock should play a major part are the St. Paul and Morinville districts. Feed in general is always plentiful and pastures are improving. More and more farmers are becoming interested in better live stock of all kinds.

Thorsby (T. Kilduff).

The production pattern of this district varied little from that of last year, but due to weather conditions, the end results were quite different. The only marked change was the trend towards increased poultry production. The number of hens doubled in the western part, but the increase was manyfold in the central and eastern sections.

Cereal acreage, devoted mainly to coarse grains, remained static. Total production was cut about 12% to 15% as a result of extensive hail damage in the central and eastern parts and early Fall frosts, which were most severe in the western part. Enough coarse grain ripened ahead of frost to produce adequate seed stocks, but these are not well distributed. On the whole, seed of cereals used in this district is of indifferent quality. Small amounts of certified and registered stocks are distributed annually through elevator agencies, but there are no continuing growers of this class of seed.

Forage crops did well this year. Much hay was put up in fair shape. Moderately good seed setting occurred in the clovers, but was light in alfalfa. Interest in altaswede is declining as that in alsike and alfalfa increases.

Dairy production, reflecting plans laid last year and aided by a favourable growing season, registered over-all gains of 8% to 10%. Cheese manufacture was lowered by transfers to butter-making and the fluid milk market. Beef production, largely a sideline here, suffered from the unstable price structure in the Fall. Swine production, the backbone industry in this mixed farming area, registered only small gains over last year. The "swine panic" swept the district this Fall, but liquidation of breeding stock was not as great as in many other districts. Sheep raising in this territory is entirely of the small flock variety.

Vegreville (W. N. Pidruchney).

The activities of this office have been confined largely during the past year to the type of programme that would direct all efforts towards the production of foodstuffs which were set out by the Dominion Government for the 1943 objectives. Increased acreage of coarse grains, forage crops and flax were advocated. The increase of hog production together with the problems of feeding and management were discussed very frequently. Farmers were encouraged to milk more cows and refrain from selling calves until

they have reached heavier weights. Labout-saving devices were encouraged, and models of such devices were constructed to assist farmers in adopting them more readily than if the responsibility of such a device was not demonstrated. Early repair of farm machinery was urged, and the co-operative use of machinery was recommended on a much larger scale than has hitherto been practiced.

Continuous use of cereal crops is bringing about a soil condition that must receive attention. Lack of fibre in the soil is evident from the action of wind, and water erosion. More suitable cultural practices are adopted by those who can afford the investment in more modern machinery, and others are using forage crops in the rotation, but neither of these practices is used very extensively. Yields of all cereal crops were considerably above normal. Frost injury reduced grades of wheat somewhat, but oats and barley were affected more seriously.

Feed supplies during the past year were plentiful, and the condition of all classes of live stock was good. Scarcity of labour on farms that are well equipped for heavy live stock production is the most serious problem. Some farmers have definitely reduced their breeding stock because of these circumstances. The revenue from dairy products has always constituted a fair share of the total farm revenue throughout this area, and last year's production was about equal to the previous year.

Beekeeping is developing rapidly, and although only a small sideline on most farms, there was a greater demand for information on beekeeping than on any other phase of farming, except swine.

Vermilion (E. H. Buckingham).

The trend to live stock production accelerated considerably in the Vermilion district during 1943. Many grain farmers who had no live stock or very little a few years ago, are now marketing grain through cattle, hogs and poultry. The shortage of farm labour is the limiting factor in live stock production at present.

As the live stock population increase, there is naturally a growing interest in forage crops for pasture and hay purposes. The topography of this district is mostly rolling, and it is felt that a cropping programme to prevent water erosion and to maintain the fertility of the land is an urgent necessity. To control this situation, farmers are being urged to seed up to one-third of their acreage to forage crops. Dairying is, generally speaking, only a side line in this district. Possibly half the farmers milk a few cows, but the total production is enough to keep three large creameries in full operation.

One of the best crops in the history of the district was harvested in 1943. There was plenty of soil moisture carried over from the previous Fall, and there was a heavy snowfall during the winter. In spite of the late spring, growing conditions were good. Weather conditions for harvest were excellent until September 4th, by which time half the crop was threshed. Threshing continued until December, but moisture content ranged from 15% to 22%.

The district is now reaping the returns of the change to greater live stock production. Revenue from sales of cattle, hogs, poultry, eggs and cream were greater than in any previous year.

Junior Clubs continue to be a major project. Aside from the educational and production standpoint, the contacts made on the farms where club members live are invaluable to an extension worker. Three beef calf clubs with 104 members, four grain clubs with 64 members, and six alfalfa clubs with 124 members completed projects in 1943.

Westlock (E. G. Wood).

The year 1943 can be considered an abnormal one in many respects. The winter of 1942-43 was possibly the most severe experienced in many years, and was followed by a summer of unusual high rainfall and low temperatures. The cool wet summer retarded the maturity of crops and harvest was delayed. Some of the later maturing crops were damaged by frost. The weather during the harvesting and threshing season was very satisfactory, and all crops were threshed and safely stored before winter arrived.

There was a marked change during the past year in the attitude of farmers towards wheat growing. The result was a very definite reduction in the acreage devoted to this particular crop. The acreage taken out of wheat growing was, in most cases, used for the growing of coarse grains. Certain special crops, such as flax and peas, were given a more prominent place, while hay and pasture crops were more widely grown. Forage crops continue to assume a more prominent position in the cropping programmes. Alfalfa still holds a front rank position as a hay crop, and from that standpoint has given excellent results. One of the most striking changes is the utilization of seed mixtures. The desirable qualities of brome are becoming widely recognized, and this grass in conjunction with alfalfa is being more extensively used.

The past year was particularly favourable for almost all kinds of live stock. Pastures remained fresh throughout the summer months, and with the open Fall, stock were able to graze over stubble fields until quite late in the year. Ample feed supplies were also stored for winter feeding. In the live stock field very little change was noted other than a slight increase in swine and beef cattle production. Horse raising is definitely on the decline, and it is expected that breeding will be carried on in a very limited way during the coming season. Dairying has shown little change since the labour factor practically prohibits any marked increase in this branch of farming.

Willingdon-Myrnam (Fred Magera).

On the whole, 1943 was a good year for this district. Weather conditions were ideal in many respects. Spring brought much flooding of land when last winter's heavy snow began to melt. Much arable land had to be left unused on this account. The remainder of the season was unsatisfactory for growth, and a favourable Fall permitted all crops to be threshed. As a result, the yield was above normal.

The land is utilized more and more for live stock production. There are more forage crops grown and more of the grain is fed. The mould board plow is still widely used. Summerfallows bring about considerable deterioration of the soil, and little relief may be expected until tractors and one-way plows are available for surface cultivation.

The seed situation was somewhat acute with respect to oats. This office organized ways and means to obtain six cars of certified seed. Fortunately, the current crop is a little better since frost damage was only slight, and oats and barley have almost normal germination. The introduction of the portable seed cleaner will, to a great extent, allevite the shortage, as more local grain may be cleaned up to seed standards.

Forage crops are becoming more popular. The municipal districts continued to take part in seed distribution. Alfalfa was very popular, with brome next in line.

Pasture was abundant during spring, summer and Fall. Live stock had an extra long autumn grazing season, and started the winter in better than normal condition. Feed supplies are sufficient until the new growth starts. Considerable attention is being paid to cattle production, and winter feeding is being practised more generally than before. Dairying is of the hit and miss type. The general run of cattle are used for milk production during the summer lush season. Swine continue to be the mainstay of the farmers. Breeding stock is supplied chiefly by local farmers who have, in former years, started with pure-bred stock. Poultry production has increased greatly, and methods used in the care of the birds has also improved. At Willingdon a Poultry Club was in operation throughout the year, taking care of chick orders and an educational programme. The trend is for a more pronounced increase, but shortage of chicks will most likely limit the increase.

REPORT OF THE PROVINCIAL VETERINARIAN

(P. R. Talbot)

Briefly the duties of the Provincial Veterinarian are as follows:

1. Assistance to farmers living in districts in which no qualified veterinarian is located.
2. Prevention and control of live stock diseases which do not come under The Animal Contagious Diseases Act of the Dominion Government.
3. Supervision of the health of live stock at all Provincial Government institutions.
4. Educational work relating to diseases of live stock.
5. Carrying out the provisions of The Stallion Enrolment Act.

The constant problem of endeavouring to keep up the high standard of the health of our animals is of the most vital importance at this critical time. We realize the enormous sums of money invested in our live stock industry by our ranchers, farmers and stockmen, and the work of this Branch is not only to assist in preventing losses in animals, but to endeavour to increase the knowledge of the causes, as well as familiarize the live stock men with the most improved methods of controlling diseases which may occur.

In recent years there has been considerable change in the thoughts and ideas regarding the methods of controlling animal diseases. Immunization of animals against disease is playing an important part in the prevention of those caused by bacteria. Unfortunately, some of our most serious losses do not lend themselves to protection through vaccination, and other means must be devised to safeguard our animals' health. More importance must be placed on sanitation if we are going to continue to raise healthy animals. We cannot continually raise the same class of animal on the same pasture, or in the same pens or yards, over a period of years unless sanitary precautions are taken. The soil is likely to become contaminated with disease producing organisms. In addition, the numbers of live stock are increasing on many farms, while the facilities for handling them have not increased accordingly. Lastly, the live stock men must realize the importance of isolating sick animals upon the first symptoms of disease.

During the past year we have endeavoured, as usual, to place before the farmers of the Province the importance of disease prevention and control. Over 34 meetings were held during the year in various parts of Alberta in connection with this subject alone, and we hope that by the application of the suggestions offered we can improve the health and conserve the lives of many farm animals.

The number of qualified veterinarians in our Province is not really sufficient to meet requirements, and on account of their being so widely distributed it would be most difficult to prevent disease outbreaks from spreading should anything of a serious nature occure. The fact that any outbreaks which did occur did not reach alarming proportions speaks very well for the capabilities

of these men—especially in view of the fact that the increase in live stock has been enormous.

The following is a summary of the principal diseases which came under the direction of the Provincial Veterinarian's Branch for the year 1943.

Horse Diseases

Equine Encephalomyelitis.

There were only a few cases of this disease reported during the past summer. Apparently the majority of animals showing symptoms of the disease suffered only a mild type, and recovered without treatment. A number of veterinarians reported that they encountered some typical cases, which would indicate that the disease is still present in the Province. A number of the cases investigated by this Branch were diagnosed as botulism and not encephalomyelitis, but as the animals recovered it was impossible to make a post-mortem examination and carry the investigation further. We believe it advisable to be vigilant in so far as this disease is concerned, for we have no assurance that further outbreaks will not occur. It is important to remember that continued investigations would indicate that there is a close relationship between equine encephalomyelitis and certain diseases in the human.

Navel Disease.

For a number of years we have endeavoured to gather information regarding this disease in young foals. It is certainly more frequently met with in some localities than in others, and on some farms the losses are quite extensive. Investigations would indicate that there are several types of the disease. It has been found that in addition to taking the usual sanitary precautions prior to and following the birth of the foal and the disinfection of the navel, that the use of reliable bacterins and serums may be used to considerable advantage. Mixed Bacterin (Equine) and Antibacterial Serum (Equine) are giving very satisfactory results as a prophylaxis and treatment for navel disease, and their administration may be the means of reducing the mortality to a considerable extent.

Cattle Diseases

Hemorrhagic Septicemia (Shipping Fever).

This disease continues to be one of the most drastic affecting the cattle industry. In spite of every effort made by this Branch, through radio talks and distribution of leaflets, the cattlemen appear to overlook the fact that this is a preventable disease. Experience has shown that shipping fever can be largely prevented by vaccination with a reliable bacterin at least two weeks prior to shipment. In fact, some of our cattlemen vaccinate twice—the first inoculation is given about a month before shipping and the second two weeks before being loaded on the cars for the stock yards or feed lots. This procedure is highly recommended.

Blackleg.

This disease has been more prevalent during 1943 than for some years past.

Several virulent outbreaks occurred, and animals were lost despite the fact that the owners had made it a practice to vaccinate each year. We have, apparently, several "Blackleg areas" in the Province, where it appears as if the bacillus were particularly

virulent. In such districts we are endeavouring to have the farmers vaccinate their calves in the spring and Fall. In some instances where loss occurred, it was found that out-dated vaccine had been used, and in others there was the possibility that the vaccine had been improperly kept. We cannot urge too strongly the desirability of using vaccine that is made by a reliable biological house, and also that it has been kept under proper conditions.

Poisonous Plants

The havoc caused by poisonous plants is fully realized by farmers and veterinarians. During the past year the loss through this source has been considerable. It is felt that the mechanical injury caused by plants, resulting in death, as well as the effect on milk production is not fully realized. Owing to the loss of milk and meat production in the case of cattle, and of meat and wool in sheep, we feel that the farmer would be well advised to study the bulletin on "Plants Poisonous to Live Stock," which may be obtained by application to the Extension Branch, Department of Agriculture, Edmonton. No reference is made to sweet clover poisoning in this bulletin, thought it is well known that the consumption of sweet clover by cattle may be followed by harmful effects, resulting in swellings of various dimensions. Animals which have been fed sweet clover are very likely to have non-clotting blood, and serious bleeding follows injuries, or such operations as dehorning and castration. On account of the popularity of sweet clover as a roughage in many parts of the Province, it is suggested that when it is being fed it should be eliminated about two weeks prior to any such operations being performed. Should animals show indications of this form of poisoning, the feed should be changed at once. Various treatments have been tried, and there are indications that special preparations can be used to good advantage.

Ergot Poisoning.

Losses from ergotism occurred on several farms during the past year. We have seen a great many cases of ergot poisoning over a period of years, but the cases seen this year were probably the worst yet experienced. We have been unable to find any satisfactory treatment for this trouble, and about all one can do is discontinue the feeding of ergotized material. In the case of pasture land containing the fungus, the animals should be removed from the source of danger at once. Succulent feed should be supplied, if this is possible, and the feeding of ensilage, beets and turnips might be helpful. Ergot contracts the small blood vessels, especially those of the limbs, tail and ears. Nutrition to these parts is then interfered with and gangrene takes place.

Keratitis.

A considerable number of cases of this disease appeared during the past year. Several outbreaks were investigated on the ranges in Southern Alberta, but the majority of the cases occurred in feed lots in different sections of the Province. There are certain indications that this trouble is due to a specific organism, but this has never been definitely proven. Certain bacterins now on the market may be used to advantage in preventing the spread of infection, and are, no doubt, of considerable benefit in the event of outbreaks.

Swine Diseases

Losses in swine continue to be a major problem. Many of the conditions encountered originate through improper management, feeding and care, as well as parasitic infestation. It is our opinion that if these things were corrected much of the loss now occurring could be eliminated.

We believe that anaemia exists to a greater extent than is realized by many of our swine men. Pigs born during the late Fall and winter do not have the opportunity to obtain sufficient iron in the diet, therefore it must be supplied through artificial means. We are recommending "Ferexate," which can be obtained at any drug store. This preparation is economical, easily administered and ensures adequate and accurate dosage.

Intestinal parasites are causing heavy losses, and in spite of bulletins, radio addresses and publicity given in every way possible, the number of swine infested is steadily increasing. The control of swine parasites is fully covered in a bulletin recently published by the Department of Agriculture, and we believe if the information given is followed it will assist in preventing losses through this source.

In connection with diseases such as Necrotic Enteritis, Swine Erysipelas and Hemorrhagic Septicemia, it is most difficult to estimate the extent of these diseases unless a positive diagnosis is made. When this has been done, specific measures of control can be carried out. We believe the services of the qualified veterinarian, when such are available, could be used by the farmer to a greater extent than they are.

The importance of sanitary measures in connection with swine production cannot be over estimated. The disinfection of hog houses and frequent changing of animals to new pastures and the isolation of sick swine would assist greatly in preventing outbreaks of disease gaining a foothold.

Sheep Diseases

The feeding of lambs is developing into one of our most important industries, and we have endeavoured to render every assistance possible to the sheep rancher, as well as to those who are feeding lambs for market purposes. As this industry has developed, diseases have occurred with greater frequency, and in some instances the losses have been quite extensive. The heaviest losses occur in connection with shipping and exposure to cold; this combined with overcrowding in railways cars, no doubt, makes them susceptible to respiratory troubles.

We have a few infectious disease of sheep that demand special mention. Of first significance is Hemorrhagic Septicemia. In certain years this has caused considerable loss, while at other times only a few cases have been reported. No doubt the weather conditions at time of shipping has a bearing on the number of animals affected. In every outbreak that came under our observation the symptoms developed a few days after the animals were exposed to infection. Other diseases that are of special importance to sheep men are Sore Mouth, Infectious Keratitis; Enterotoxemia, and Lamb Dysentery. These can be controlled if the necessary precautions are taken.

Stallion Enrolment

The draft horse industry in this Province is in a most uncertain state. There has been some demand for horses of a certain type for the Eastern markets, and several thousand inferior animals have been disposed of for various purposes. Our impression is that little constructive heavy horse breeding can be done until after the war. It is impossible to say what developments may take place at the cessation of hostilities. Some persons, who should be in a position to know, believe that there will be a demand for farm horses in connection with the "Back to the Land Movement" which is bound to occur when world conditions return to normal. On the other hand, there are others equally well informed who are firmly of the impression that tractor farming will play a more important part than ever, and that heavy horse breeding will continue to a limited extent. From a careful study of the horse situation during the past year, we believe that the methods employed in horse breeding are likely to undergo drastic changes. The farmer cannot pay high service fees and, after rearing, feeding and breaking colts, dispose of them at the prices offered at the present time. We are faced with the problem as to whether, during these difficult times, the farmer should be encouraged to raise horses, which he has difficulty in selling, or should his energies be directed to other classes of live stock for which he can find a ready market, and the raising of which would be really helping the war effort. These are conditions that are facing the horsemen, and it is doubtful if there is a workable solution for them at present.

A certain demand will always exist for a limited number of good sound horses of the proper weight and conformation, and for this reason we must encourage the use of the best sires possible. We are now in the position where the supply of stallions on hand greatly exceeds the demand, with the result that good stallions do not bring the price they should. We have always maintained that a good individual is entitled to demand a fair price, and our efforts should be directed to bring this about.

We do not know of any way to have a record of our stallions other than by inspection and enrolment. By this means we know the horse is sound and comes up to the desired standard. By this means we also know his breeding ability, which is most important.

The picture in connection with light horse breeding is entirely different to that of the draft breeds. Thoroughbreds, saddle horses and hunters are in demand, and will continue to attract interest from a class of people that are not interested in tractor farming. The Thoroughbred Horse Breeders' Associations of Edmonton and Calgary have done a great deal to stimulate interest in these classes of animals. Our riding schools and various organizations of a similar nature have aided in the improvement of light horses, and are playing an important part in developing a market for horses desirable for their purpose.

In addition, there is a demand for delivery horses in cities of Eastern and Western Canada. This is a special type of horse and the demand is limited, but he can only be produced by breeding along special lines.

The following is a summary of the work accomplished during the year 1943 in connection with the Stallion Enrolment Branch:

Breed	Enrolled	Inspected	Passed	T.D.	To be Re-examined
Percherons	323	139	107	31	14
Clydesdales	111	40	29	11	1
Belgians	127	56	43	12	2
Shires	5	1	1	.	..
Suffolks	5	3	3	..	. ..
Standardbreds	8	4	4	.. .	....
Thoroughbreds	18	6	6	.	....
American Saddle	2	2	2	.	. .
Total	599	251	195	54	17

The following statistics gives the number of horses sold at the Lacombe Horse Sale since 1930 up to and including 1943, and the Calgary Horse Sale for the past three years:

LACOMBE HORSE SALE

Year	No. Sold	Total Sale Value	Ave. per Head
1930	357	$16,569.86	$82.80
1931	605	33,465.00	55.31
1932	386	22,976.50	61.08
1933	187	10,328.00	55.23
1934	203	13,764.50	67.80
1935	366	25,110.50	68.60
1936	308	25,830.25	83.86
1937	540	50,712.00	93.91
1938	684	57,540.00	84.10
1939	1,005	79,515.60	79.12
1940	815	59,288.00	72.75
1941	681	42,947.00	64.24
1942	711	49,282.50	69.30
1943	707	51,737.50	73.25

CALGARY HORSE SALE

1941	322	$21,896.00	$68.00
1942	347	25,225.00	72.69
1943	616	43,298.50	70.28

The following gives the number of stallions enrolled according to constituencies:

Constituency	No. of Stallions	Constituency	No. of Stallions
Acadia-Coronation	19	Macleod	3
Alexandra	18	Okotoks-High River	3
Athabasca	17	Olds	14
Banff-Cochrane	4	Peace River	15
Beaver River	15	Pembina	6
Bow Valley-Empress	5	Pincher Creek-Crowsnest	2
Bruce	18	Ponoka	16
Calgary	15	Red Deer	14
Camrose	15	Redwater	27
Cardston	3	Rocky Mountain House	12
Clover Bar	24	St. Albert	18
Cypress	....	St. Paul	13
Didsbury	9	Sedgewick	13
Drumheller	1	Spirit River	11
Edmonton	17	Stettler	18
Edson	8	Stony Plain	18
Gleichen	1	Taber	2
Grande Prairie	11	Vegreville	20
Grouard	11	Vermilion	24
Hand Hills	25	Wainwright	25
Lacombe	17	Warner	2
Lac Ste. Anne	15	Wetaskiwin	12
Leduc	15	Willingdon	25
Little Bow	▮		

REPORT OF THE ACTING ANIMAL PATHOLOGIST

(R. Walton)

The Veterinary Laboratory carries out the following services:

1. Post-mortem examination of specimens submitted to the laboratory by veterinarians, farmers and District Agriculturists. A laboratory examination of this material is made where necessary. Findings are recorded and reported to the shipper.

2. Testing of blood samples submitted by registered veterinarians, under the Department's plan for the control of contagious abortion in cattle. Blood samples submitted by the Poultry Branch are tested for pullorum disease.

3. A large volume of correspondence is answered relative to diseases in live stock, and a great deal of time is spent discussing these problems with veterinarians and live stock owners who visit the laboratory, or at field days, farmers' meetings, etc.

4. Investigational work on the prevailing animal diseases, as time, staff and equipment will permit.

These services are provided without charge in an attempt to reduce losses amongst live stock, and all the efforts of this office are directed towards advocating preventative medicine rather than treatment.

Diagnostic Service.

During the year, a total of 1,404 specimens have been received and examined. Registered veterinarians submitted 2,322 blood samples, which were submitted to the tube agglutination test for contagious abortion in cattle. Likewise, 3,309 chicken and 4,141 turkey bloods submitted by the Poultry Branch were tested for pullorum disease.

Nineteen animal species are represented in the specimens submitted. Number, nature and conditions found are shown in the following tables:

TABLE 1

	Live	Dead	Portions	Total
Swine	132	243	65	440
Horse	....	....	5	5
Cattle	1	4	55	60
Sheep	8	8	7	23
Fox	3	23	....	26
Mink	13	37	1	51
Rabbit	1	9	2	12
Dog	....	3	3	6
Cat	..	1	....	1
Marten	.	1	....	1
Mountain Sheep	..	..	2	2
Elk	..	....	1	1
Milk	..	..	49	49
Chicken	155	136	23	314
Chick	80	248	....	328
Turkey	15	47	3	65
Birds	....	7	....	7
Feed	..	....	5	5
Faecal Sample	.	.	8	8
Total	408	767	229	1.404

TABLE 2

	Horse	Cattle	Sheep	Swine	Fox	Mink	Rabbit	Dog	Cat	Miscellaneous	Total
Abortion		4* 3†									7
Abscess						2					2
Actinomycosis		6									6
Anemia				41							41
Avitaminosis				7							7
Blackleg		7									7
Blood	1	2		11							14
Coccidiosis		2					2				4
Corynebacterium		2		1							3
Distemper					1	8					9
Ergotism		1									1
Errors in Feeding			1	83	1	13	4			1	103
Food Poisoning	1	5	4		2	4					16
Gastritis and Enteritis			3	66	2	2					73
Hernia				1							1
Infectious Anemia	1										1
Infectious Enteritis									1		1
Infection of Newborn				20							20
Injury				5							5
Lungworm				1							1
Mange				1* 4†							5
Mastitis		16* 33†									49
Necrotic Enteritis				28							28
Necrophorus Infection		3		1							4
Neoplasm								1			1
Overdose reduced Iron				4							4
Pasteurella Infection		6	1	4							11
Peritonitis				5							5
Pneumonia		2	4	29	4	5		2			46
Poisoning				6							6
Pregnancy Disease			7								7
Pulmonary Edema				16							16
Pyemia		1									1
Pyelonephritis								2			2
Rickets					1	5					6
Roundworms	1			19					1		21
Sarcosporidiosis				1							1
Septicemia				2							2
Snuffles				2							2
Staph. Infection						5					5
Stiff Lamb Disease			2								2
Strep. Infection					1	1				1	3
Swine Erysipelas				22							22
Swine Influenza				19							19
Tapeworm			2						1		3
Traumatic Pericarditis		1									1
Tuberculosis				1							1
Worms, miscellaneous		1								1	2
N.V.L., or Putrid	1	11	2	19		3	4	2			42
Miscellaneous	1	6	1	20	4	1	1	1		9	44
Total	6	114	27	439	16	49	11	8	3	12	683

*=positive diagnosis.
†=negative diagnosis.

TABLE 3—POULTRY

Blackhead	3	Nutritional disorders	94
Cannibalism	4	Ovarian cysts	4
Chilling or Overheating	128	Perosis	1
Coccidiosis	65	Prolapse	4
Crazy Chick Disease	13	Pullorum Adult	2
Egg Bound and Internal Laying	15	Pullorum Chick	42
Enteritis	4	Roup	10
External Parasites	3	Ruptured Liver	3
Fowl Cholera	5	Septicemia	6
Fowl Typhoid	19	Sinusitis	1
Hemangioma of Liver	4	Tuberculosis	62
Injuries	2	Tumors	5
Internal Parasites	19	Miscellaneous	22
Impaction	13	No evidence of Disease or Putrid	88
Laryngotracheitis	21		
Leucosis complex	53	Total	715

Biological Products.

Brucella abortus vaccine for vaccination of calves can now be purchased by any registered veterinarian from commercial supply houses, hence the Department has dispensed with its plan of distributing this vaccine.

A few autogenous bacterins have been prepared in some cases to evaluate their usefulness in controlling certain diseases of live stock.

Formalized tissue vaccine was prepared for an outbreak of distemper in mink, with the distribution of 750 doses of this vaccine.

Poultry.

Coccidiosis has shown a substantial decrease over 1942. This corresponds to a drier summer and late spring. Although the number of pullorum cases show a decided drop, this may not be a true picture. The large number of dead and decomposing chicks which are received makes a bacteriologic examination very difficult and, in most cases, these are useless for examination.

Swine.

Losses among swine remain high despite the fact most of them are preventable. Swine erysipelas presents some unsolved problems. Its sudden appearance in widespread areas, with no accountable introduction of infection, is difficult to explain.

The occurrence of this disease in one of the staff through handling infected carcasses, indicates its importance from a human health viewpoint. In humans, this is an occupational disease confined to veterinarians, butchers and others engaged in the handling of swine carcasses. Erysipeloid, as it is called in human medicine, is characterized by an intense pruritus, swelling and a peculiar purplish discoloration of the hand, or hands. Seldom does it go above the wrists or attack other parts of the body.

The promiscuous use of hemorrhagic septicemia bacteria by swine raisers for any and all swine ailments is highly illogical and unwarranted.

Fur Bearing Animals.

The incidence of distemper among these animals remained very low throughout the year. Late in the Fall an outbreak in mink did occur in one area for which formalized tissue vaccine was prepared. The results of using this vaccine have, as yet, not been obtained. Feeding troubles continue to be the greatest factor in causing losses in these animals.

Contagious Abortion.

The control of this disease lies in the vaccination of all heifer calves between the ages of four and eight months. To stimulate this method of prevention, the laboratory provides a free blood testing service to herd owners who undertake calfhood vaccination, through their local veterinarian. This has entailed the testing of 2,322 samples, with the following results: Positive 561, Doubtful 39, Negative 1,722; Total, 2,322.

The number positive does not indicate a percentage of reactors, as this includes post-vaccination tests and retests of positive herds.

Certificates of vaccination were issued for 125 heifers, which satisfactorily passed a post-vaccination test.

Extension Service.

We have continued to attend field days, etc., at the request of the Director of Agricultural Extension, to discuss problems of animal disease control.

REPORT OF PROVINCIAL APIARIST

(W. G. LE MAISTRE)

The honey crop of 3,800,000 lbs. is the largest ever harvested. This is 22% larger than the previous record (1941, 3,120,000 lbs.). This result is remarkable since, outside the irrigated areas, the average production per hive was about half the normal. It was achieved through a tremendous increase in the number of hives being operated.

	Production in lbs.		Price per Pound to Producer		Value in Dollars	
	1942	1943	1942	1943	1942	1943
Honey	2,500,000	3,800,000	14.5c	14.5c	362,500	551,000
Beeswax	35,000	53,000	40c	45c	14,000	23,000
					376,500	574,850

BEES

	1942	1943
Number of hives	27,500	43,000
Number of beekeepers	3,800	7,600
Number of hives per beekeeper	7.2	5.6
Production per hive (lbs.)	91	89

The tremendous increase in hives and number of beekeepers is undoubtedly the result of a desire on the part of many to augment their food supplies. A considerable annual increase in beekeeping was occurring even before sugar and preserves were rationed. Rationing has accelerated this increase tremendously.

The average number of hives operated by each beekeeper was 10 in 1941 and only 5.6 in 1943. Though some increase in the number of commercially operated hives is noticed, by far the greatest increase is by the sideline beekeepers.

Of the 43,000 hives operated, 36,000 were established from packages purchased from United States breeders. The delivered cost of packages has been rising rapidly during the last few years. In 1939, the average price for a 2lb. package of bees was about $2.75, while in 1943 it was $4.25. Another factor making package bees an unsatisfactory source of colonies is the high percentage of them that fail to become productive. The causes of these failures are various, though generally classified as being due to supersedure of the queens occurring from one to eight weeks after introduction. It is not possible to obtain redress from the breeder once the bees have been received, apparently in good order. The considerable increase in failures (1943, 22%; 1942, 14%; 1941, 10%) noticed for the last two seasons requires investigation. The uncertainty of obtaining packages and the increase in their cost has led to a considerably larger number of colonies being wintered. Nearly twice as many hives were put into winter quarters as last year; but the winter losses were very heavy, mainly due to starvation and moisture accumulating in the hives.

	1941-42	1942-43
Colonies being wintered	7,000	13,000
Colonies being wintered, per cent of total	20	47
Winter losses of colonies	2,400	6,000
Per cent loss of wintering colonies	34	46

Season.

The early part of the season during the building up period for the colonies was cool and bee flight was limited. Heavy artificial

feeding was necessary. Many colonies suffered from pollen shortages.

The average production per hive varied greatly according to districts. In southern irrigated areas it was 135 pounds and in unirrigated and more northerly parts, it was only 55 pounds. The low average of these latter areas was caused largely by the prolonged wet anad dull weather during the main honey flow period of July. The provincial average of 89 pounds is about 20% below normal.

Marketing.

Marketing has, as usual, been a major problem in the industry. Not for the same reasons as in previous years. The increase in beekeepers' costs of operating led them to seek higher prices than could be permitted under the Wartime Prices and Trade Board orders. The result has been that, like 1942, only a relatively small quantity of honey went through the wholesale trade. A big percentage of the crop was sold to consumers at retail prices. The rationing order, at the end of August, had the effect of stopping all legal sales to consumers in any quantity. Then it became apparent to the beekeeper that most money could be made by selling honey in smaller containers than the usual two, four and eight pound tins commonly used. Furthermore, the original ration of one coupon per half-pound of honey did not permit the average buyer to purchase the larger sizes, and since the coupon could be used for jam or sugar, the demand for honey was tremendously reduced.

It appears that practically all honey was out of producers' hands by December. Owing to the lateness of the season when the rationing order was introduced, many producers were relatively unaffected by it. Those who still had honey to sell were able, for the most part, to find outlets by shipping to the Alberta Honey Producers' Co-operative, where it was repacked, or to supply other trades than the wholesale.

	1942	1943
Producer to wholesaler, per case 8's	$6.25	$6.58
Producer to wholesaler, bulk, per lb.	.11¾	.11¾
Producer to retailer, per case 8's	6.75	7.00
Producer to retailer, bulk, per lb.	.12½	.12½
Producer to consumer, bulk, per lb.	.15½	.15½

Disease Control.

Considerable difficulty was experienced in getting competent inspectors to undertake the work of inspecting for disease amongst bee hives. Eleven inspectors were appointed, but only eight functioned, and their time was limited by other duties.

	1942	1943
Number of hives inspected	7,900	5,113
Number of apiaries inspected	803	600
Number of hives diseased (A.F.B.)	145	233
Percentage of inspected hives diseased	1.8	4.56
Percentage of all hives diseased	.52	.54
Number of beekeepers registered	3,411	7,600
Number of beekeepers not registered	400	300
Number of hives registered	24,559	41,300
Number of hives not registered	3,000	1,700
Percentage of beekeepers not registered	11	4

Disease is being fairly well kept under control with the present system. One serious outbreak was discovered and two new minor outbreaks were dealt with. A sprinkling of disease was discovered in some areas.

Experimental.

The apiary is now established on a small scale, and in a position to function as a demonstration and test apiary.

It is considered inadvisable to undertake any long time experiments until after the war, when it should be possible to have an attendant work at it at least part time. Occasional day labour is not conducive to proper experimental results.

Some tests to discover the cause of so much failure in package bees were inconclusive, since the hives under test did remarkably well.

Extension.

A great deal of time is devoted to meetings and demonstrations. Considering the very great number of beginners, this work is of considerable benefit to the industry. Administrative and other matters affecting the industry in general are going to exclude much of this in future unless it is possible to delegate some of this work. The District Agriculturists are of inestimable assistance in organizing these meetings. They have been well attended.

Bulletins 35 and 58, together with leaflets, have been in great demand. Circulars containing useful hints have been sent out. A moving picture on wintering bees has been prepared and is in use.

The Provincial Apiarist is secretary of the Alberta Beekeepers' Association. This organization is mainly concerned with the welfare of the industry in Alberta, and has done a good deal for it.

REPORT OF SCHOOL OF AGRICULTURE, OLDS

(James Murray)

Since this school is the only one operating in the Province at present it is very well attended, students being drawn from all parts of the Province. The 1942-43 term ended early in April. At the closing exercises, diplomas in Agricutlure were presented to 42 young men, and diplomas in Home Economics to 30 young women. Dr. W. H. Swift, formerly a member of our staff and now Chief Inspector of Schools for Alberta, was the guest speaker. Mr. O. S. Longman represented the Department of Agriculture.

Scholarships were awarded to 1942-43 students as follows:

The Alberta Wheat Board Monies Trust Scholarships of $100.00 each, tenable at the University of Alberta when the winners register for a degree course, were awarded to the following: Stephen Fushtey, Wasel; Gordon Ross, Duhamel; Eldor Berg, Millicent; Neil Giles, Marwayne; Mary Davidson, Alliance.

Scholarship of the value of $75.00 to the student in the first year course in Agriculture standing highest in the year's work—Awarded to Vair Reid, Cremona.

Scholarship of the value of $75.00 to the student in the first year course in Home Economics standing highest in the year's work—The award went to Karen Jacobsen, Rosedale Station.

Mr. A. L. Searle, President of the Searle Grain Company, again offered two Scholarships, each of the value of $50.00, for progress made during the first year's work. The one in Agriculture was won by Henry Neilson, Sundre. The award in Home Economics went to Margaret Campbell, Eston, Saskatchewan, but reverted to Paula Bourgeois, Girouxville.

Girls' Alumnae Scholarship of $50.00 to the student in Home Economics who makes satisfactory progress in academic work and makes contributions of value to the athletic, social and literary life of the school—Awarded to Yvonne Lynch, Armada.

The O.S.A. Experimental Union Scholarship is awarded on the same basis as the above to a student in Agriculture—The winner was Donald Barker, Calgary.

The Alberta Women's Institute Scholarship is awarded to a first year student in Home Economics who has a creditable scholastic record for the year and has made valuable contributions otherwise—The award went to Eleonora Sjogren, Brightview.

Student Health.

In spite of our best efforts to keep the students healthy, we have each year too much lost time through illness. Coming from all parts of the Province, students returning after the Christmas vacation frequently bring in such infectious diseases as chickenpox, measles and mumps. Since our facilities for isolation are very inadequate, it is difficult to keep such diseases from spreading.

Last spring we were unfortunate in having mumps introduced in January, and while at no time did we have any great number of cases, we had a few until the close of the term in April. A few had to stay 10 days after the close before they were able to go home.

After the students register in the Fall, we have the co-operation of the Health Unit in immunizing them against scarlet fever and diphtheria and in vaccinating against smallpox. We think this has been a worth-while safeguard, and it has been followed now for several years.

In November we had a serious outbreak of influenza. The type was comparatively mild, and most of them recovered and were back

in class in a week's time, but a few were confined to bed for longer periods. We had to get additional nursing help for 10 days. The Red Cross came to our assistance, too, in securing for our temporary use a number of army cots and mattresses, these being unobtainable in a commercial way.

Attendance.

We have in attendance this year as many students as we can accommodate, and had to refuse admittance to quite a number. These are on a waiting list for the session of 1944-45. With our present accommodation we can only house 90 boys and 70 girls in the dormitory. This year nearly all the second year students in Agriculture have living quarters outside, and a few Home Economics students are also living in private homes.

Our classroom and laboratory facilities are practically filled with 200 students. We should have dormitory room for this number. Some additional space is also needed for hospital facilities.

Staff Changes.

Mr. J. E. Hawker, B.A., B.Sc., has joined the staff as Instructor in Field Husbandry. He is also Dean of the boys' residence. Mr. J. E. Price, who was Instructor in Animal Husbandry for the past three years, has joined the Navy, and his place was filled by the appointment of Mr. W. C. Gordon, B.Sc. Miss Lillian Ferbey, who has been Instructress in Home Economics for the past two years, resigned last spring to get married. Miss Helen Moseson was appointed to take her work. Miss Esther Mants is Instructress in Home Nursing in place of Miss Young, who resigned last spring.

Courses of Study.

With few exceptions, our students in both courses come from farms—mainly from Alberta. They come with widely varying academic preparation. For most of them this school provides their final formal schooling. Only a small percentage go to the University for a degree. If a high school standing were required for entrance many students would be debarred, as we get quite a number each year who, for various reasons, have little or no high school training, and have been out of public school for a number of years. Frequently those who have been out of school for a number of years and who come here realizing that they left school too soon, make excellent progress. However, we strongly recommend students to get as much high school work as possible.

The calendar fully outlines the work covered in the various courses, so that it is unnecessary here to give any details. It should be said, however, that the course in Agriculture is primarily for those who intend to engage in practical farming, and the one in Home Economics is for homemakers.

There are, during the school year, several days that stand out as of special interest to students and their parents and friends. Closing Day, early in April, is of course of special interest to the graduating class. They hope then to get their diplomas, for which they have worked for one or two years.

Achievement Day is usually held about the third week in March. At that time students display some of the work they have done in practical classes. The boys show woodwork, blacksmithing, ropework, drawing, etc. The girls show their sewing, weaving and

handicrafts of various kinds. Usually we have an interested crowd of visitors of from 500 to 700.

The "Little Royal" held about the middle of March is a display of live stock fitted and shown by the boys of the graduating classes. Horses, cattle, hogs and lambs are on display, and the work of the exhibitors is passed and criticized by a competent judge.

Summer Courses.

Representatives from the Junior Farm Clubs to the number of about 160 were at the school for a week early in July. A programme of demonstrations, lectures, sports and entertainment was provided, mainly by the staff of the school.

Five scholarships were awarded to students in attendance, the amount in each case—$75.00—to go toward the expense of a regular course at this school. The winners were:

Beef Clubs—Clarence Hummel, Castor.
Dairy Clubs—Clara Belle Webb, Linden.
Swine Clubs—Cecile Dunbar, Calmar.
Wheat Clubs—Laura Storch, Morrin.
Oat and Barley Clubs—Frank Pawlowski, Spedden.

The Women's Institute Girls' Clubs again had their annual convention here. With them met representatives of other girls' clubs operated by the Department of Agriculture. Mrs. McGorman, of Penhold, was Supervisor of the Women's Institute Girls' Clubs, and Miss Margaret Fraser had charge of the other group. A programme of instruction and inspiration was provided by the members of the staff, assisted by Mrs. Weller, of Calgary.

The special course provided for farm women was one of the best we have held during the past 14 years. Over 80 women were here throughout the week, and many others dropped in for one or two days. We again had the able assistance of Mrs. Weller in furnishing a programme of interest and value.

This year we did not attempt to hold a Farm and Home Week as restrictions on travel made a good attendance doubtful. However, we had our general field day late in July. Dean Sinclair of the University was the guest speaker. We had an attendance of over 300.

Stook Sweep School.

During the year a great deal of interest has centred around the construction of stook sweeps as a means of saving labour during the threshing season. A few sweeps were made in the Fall of 1943 by various men in Central Alberta. Advantage was taken of the experience of these men to build one here last spring for our own use.

As there seemed to be a definite place for such a machine on many farms, arrangements were made to give instruction to a number of men who might build them for sale.

Accordingly, about 20 men were selected to come to the school for some instruction in sweep construction. These men were all mechanics operating machine shops or blacksmith shops of their own in the towns and villages in the central part of the Province. They were here from three to six days each, most of them taking home with them a sweep well on the way to completion. These men were given some assistance under the Dominion-Provincial Youth Training Plan.

During the months of June, July, August and part of September many farmers who wished to build sweeps for themselves were given some assistance in constructing them in our shop by our instructors, Mr. Parkinson and Mr. Armstrong. The required materials were ordered in as required, and assistance given in constructing the sweeps and adapting them to the various types of tractors to be used. About 70 machines were made in the shop during the summer. Most of these were used with satisfaction during the threshing season; some had to have adjustments made after they were put to work, and some were not satisfactory, as they had not been properly adapted to the tractors or trucks that supplied the power.

We used one here during the threshing season, and it enabled us to thresh cheaper and with less manpower than would have been otherwise possible.

Field Crops

Weather Conditions.

The total precipitation for the year (rain and snow) was only 13.7 inches, the lowest since 1934, when we had 10.27 and about five inches below normal. However, there was a good carry-over of moisture from 1942, as we had 3.7 inches from August to December in that year. While much of this was in the form of snow, and there was some run-off, most of it was absorbed in the spring.

Fortunately, most of the rain came during the growing season. The following table gives a comparison of 1942 and 1943:

DAYS DURING WHICH RAIN FELL, AND AMOUNTS

9 days—	2.00 ins.	May	12 days—	2.25 ins.
16 days—	2.88 ins.	June	15 days—	3.48 ins.
14 days—	3.52 ins.	July	9 days—	1.55 ins.
14 days—	2.74 ins.	Aug.	13 days—	2.47 ins.
14 days—	1.20 ins.	Sept.	4 days—	.61 ins.
67 days—	12.34 ins.		53 days—	10.63 ins.

The spring was comparatively free from wind so that the land dried slowly and seeding was delayed. Growing conditions during May and June were very favourable, however, there being in the two months 486.6 hours of bright sunshine as compared with 422.2 in 1942. The frost free period was longer than usual, the last spring frost being recorded on May 16th and the first damaging frost on September 19th. The intervening period was 126 days. The highest temperature was recorded on July 21st, 85°.

January was an extremely cold month, when it was below zero in 21 days—the warmest registered being 50° and the coldest —46°. Harvest and threshing weather was for the most part excellent, but a snowfall in September delayed cutting of late crops and lodged them badly.

New Crops Under Test.

Several crops were grown on an experimental scale to determine their possibilities in this district as sources of oil, the ordinary sources of supply having been cut off on account of the war.

Saflower has been tried several times, but has never matured seed. It requires a longer season than we have here.

Two varieties of sunflower were grown, Mennonite and Sunrise. The Mennonite (Orchard's strain) when sown May 5th gave a yield of 1,167 lbs. of seed per acre. The seed was of good quality, weighing 27 lbs. per bushel. Sunrise was later and did not properly

ripen. The Cole's strain of Mennonite was also too late. The yield was 888 lbs. per acre of poor quality seed.

Black Argentine rape was seeded May 5th, May 22nd and June 4th. The earliest seeding produced a crop which matured fully at the rate of 3,600 lbs. per acre. It weighed 52 lbs. per bushel and gave a high germination. The second seeding yielded 1,700 lbs. of seed per acre and was not fully ripe. The June seeding did not ripen.

The rape was sown in rows two feet apart and cultivated. It is in many respects similar in appearance and behaviour to some of our wild mustards, and might easily become a troublesome annual weed, as it shells readily when being harvested.

Several early varieties of soy beans were again sown. Even the earliest of them, Pagoda and Kabott, failed to ripen. This is in line with our previous experience.

Creeping Red Fescue.

Foundation stock seed of the Olds strain of this grass was sold to registered seed growers in various parts of Alberta. We again grew a limited amount of seed for sale.

Commercial seed of this grass continues to find a ready market for use in lawns, pastures and fairways. It yields abundant crops of seed in certain restricted areas; in others the yield is negligible. This peculiarity probably accounts for the fact that price remains fairly high.

Siberian Red Clover.

This variety of red clover, which has been grown here in a small way for about 15 years, continues to give a good account of itself in many ways. It is more or less procumbent in habit of growth; partly hairy, but mainly with smooth stems. It has been tested here for many years for hardiness, and has proven to be the most winter hardy of any tried.

Unlike many of the red clovers, it is not a biennial, but usually lives three, four, or five years. It is well suited for mixing with timothy for hay or for pasture. It is a good seed producer. On account of its hardiness and its suitability for growing with timothy, this clover is specially well adapted for growing on the gray wooded soils of Alberta.

Horticulture

Vegetable Seed Production.

This project continues to receive considerable attention. It has not been possible to have many Alberta growers engage in the production of vegetable seed in a commercial way on account of labour shortage. We have not attempted extensive production here, but we have for a number of years been demonstrating its possibilities. We have grown for distribution through the Experimental Union seed of carrots, beets, turnips, parsnips, chard, beans and peas. These have given excellent satisfaction where used.

Fruits.

The severe winter of 1942-43 sorted out quite a number of tender varieties, particularly of tree fruits. No other agency can do this effectively. Some loss was also suffered through the depredations of field mice. They lived over the winter in grain stooks and girdled many trees and shrubs.

Many years of trial have shown the following varieties to be suitable for this part of Alberta:

Crabs and apples—Alexis, Dolgo, Trail, Wealthy, Printosh, Osman, Hibernal, Transcendant, Hyslop.

Plum-cherry—Opata, Sapa.

Cherries—Brooks Sand, Sioux.

Strawberries killed out very badly, leaving only a few older varieties such as Dunlop, Watson and Gem.

Raspberries were partly covered with soil as usual, and came through without loss, producing a fair crop.

Potatoes.

The potato deserves much more attention than it receives, as it is a crop which is grown on at least a small scale on every farm, and fairly extensively on many. The Alberta acreage is around 30,000. The average yields during the past three years have been 65, 95 and 69 cwt. per acre, or an average of 76 cwt.

The following table shows the yields that have been obtained here from a number of our best varieties for the past three years. It shows what healthy seed of suitable varieties and good cultural practice will do in producing a crop. The potato crop should have land in a high state of cultivation. Where this is supplied, the acreage required on the average farm could be considerably reduced.

POTATO VARIETIES—YIELD IN CWT.

Variety	1941	1942	1943	Average Yield for Variety
Bovee (pink)	193	246	253	230
Carter's Early Favorite	251	240	251	247
Early Ohio	165	231	187	194
Chippewa	186	286	246	239
Irish Cobbler	152	222	214	196
Katahdin	174	191	268	211
Netted Gem	219	220	212	217
Vick's Early	237	286	253	258
Warba	205	226	307	246
Average for year	198	238	243	

Experimental Union.

We had over 300 members of the O.S.A. Experimental Union in 1943, located in all parts of the Province. Included in the material distributed were potatoes, vegetable seed, plants, bulbs, grass seed and shrubs. Members are able to greatly improve their grounds and gardens, and thus add to the home-like appearance of their farmsteads.

Grey Soil Investigations and Demonstrations

Most of the work is confined to three farms in the Sundre and Garrington districts, but a number of minor tests are made on other farms in the grey soil area west of here. As an illustration of the work being done, that on the farm of John Mallory will serve.

A five year rotation has been established on this farm. Each field in the project is two acres in extent. The rotation is as follows:

1st Year—*Clover and timothy* mixture seeded in June without nurse crop.

2nd Year—*Hay,* fertilized either in the spring or the previous fall with sulphur containing fertilizers.

3rd Year—*Hay;* after the heavy crop is harvested in July the land is plowed and worked as a fallow for the balance of the season.

4th Year—Grain.

5th Year—Grain.

This rotation was in its fourth year in 1943. Newal barley was grown on the field that had been in clover the two previous years.

The yield of hay in 1941 and 1942 was as follows:

	Check	Gypsum
First crop after seeding (1941)	1,410 lbs.	4,950 lbs.
Second crop after seeding (1942)	925 lbs.	3,140 lbs.
Total	2,335 lbs.	8,090 lbs.

The increase in yield of 2 tons, 1,755 lbs., was obtained by the use of 100 lbs. of gypsum costing 70c.

The yield of barley in 1943 was as follows: After unfertilized clover, 14 bus. per acre; after fertilized clover, 33 bus. per acre.

Considering the yield for the three years, the application of gypsum to furnish the much needed sulphur resulted in an *increased yield of hay of over two tons per acre* and 19 *bushels of barley per acre at the nominal cost of seventy cents.*

Similar results, but not always so striking, are being secured on other farms with grey soils. Field days are held on the farms where the tests are under way to bring the results to the attention of other farmers on similar soils in the districts.

The School Farm

The farm has been reduced in size during the year, as the McKercher farm of 320 acres adjoining the school property has been sub-let. We now have approximately 560 acres operated as a farm, about 100 acres of which is native pasture. The aim is to produce on the farm all the grain, hay and pasture required for a rather heavy stock of cattle, horses, swine and sheep.

It was necessary in the spring to finish up the 1942 threshing, as a considerable acreage of ours in common with many others in the central part of the Province stood all winter under snow. The barley was damaged severely by mice, but the oats came through in very good condition, and yielded 80 bushels per acre. Fortunately, good weather in April enabled us to complete the threshing.

The growing season was very cool, with the rainfall well distributed. The hay crop was secured with difficulty on account of the frequent rains, and was of fair quality. A stook sweep, used on a small tractor, saved much labour both in stacking hay and moving stooks to the separator during the threshing season.

Harvest was late, and in consequence considerable damage was done by frost. However, both our oats and barley will make seed. Cutting was tedious on account of an early snowstorm that flattened much of the crop. Yields were good, the oats running 80 bushels and the barley 60 bushels per acre.

During the year, the Aberdeen Angus herd has been reduced by selling about 18 head to breeders in the Province. We now have about 14 head, all of Blackcap and Bandolier breeding. Our herd sire, Bar Eston, has proven to be a splendid sire. He has recently been exchanged to Thos. Henderson & Son for a young bull by the same sire. With this bull and the select females, we can look forward to raising some outstanding calves and building up a good herd.

The Shorthorn herd has also been somewhat reduced, but we still have a good group of high class females. The bull Gold Bar

Monarch is coming up to our expectations as a breeder. His calves are in brisk demand at good prices.

Since the programme for artificial insemination has been started here with Holsteins, the breed in which the greatest interest centres, a small herd of Holsteins has been started. A few females were brought down from Vermilion and half-a-dozen others were bought in November. With the good sires that will be available, it should be possible to breed up a good herd that will be valuable for class purposes. The Ayrshire herd has been disposed of.

The Yorkshire herd has been maintained at about the same size, 12 to 15 breeding sows. There has been a good demand for breeding stock, mainly from farmers in this part of the Province, but a few have been shipped considerable distances. The small flock of Hampshire sheep is maintained and is doing very well.

The number of Percherons has been somewhat reduced, partly because most of our field work is done by tractors and through there being less of a demand for stallions. During the year we sold three young stallions, three mares and four geldings.

Efficient help has been scarcer than usual during the year, but with the co-operation of everyone we have got along satisfactorily.

The farm has been under the efficient management of Mr. Walter K. Ross, who has given the best of co-operation.

The School Farm at Vermilion

Since the last report the acreage under operation has been reduced, as the lease on a half-section of land has expired. There is now about 875 acres being farmed, all but about 50 acres under cultivation.

For a number of years a considerable acreage has been maintained in hay and pasture as a means of furnishing feed for the stock, of controlling weeds and soil drifting, and of maintaining the soil fertility. Various mixtures have been used, but in all of them alfalfa and brome have predominated. Crested wheat grass, creeping red fescue and Kentucky blue have been added according to the requirements of the case.

The rainfall favoured a good growth of hay, but interfered with the making of the hay. However, it was finally cured and yielded well over 1½ tons per acre. Oats and barley yielded fair crops. The Newal barley produced 48 bushels per acre and the Erban oats 65 bushels.

The Holstein herd was disposed of in the spring. The herd bull and some of the better females were taken to the farm at Olds, and the others were sold locally. Twenty-five head of steers were bought in the Fall as feeders.

There are 18 horses on the farm, all Clydesdale except for one, a grade. No foals were raised during the year.

There has been a good demand for the young stock of Yorkshire swine. During the year, 78 gilts and 59 boars have been sold for breeding purposes. The herd is headed by Cottesmore Lad 82U and Chesley Wonder.

The sheep flock consists of 33 ewes and 20 ewe lambs, with a Stewart ram at the head. A good lamb crop was secured. Eight choice ram lambs were sold for breeding in the Fall.

Mr. Gordon Ogston is manager of the farm at Vermilion, and has furnished the information contained in the above report.

REPORT OF SUPERVISOR OF JUNIOR ACTIVITIES AND YOUTH TRAINING

(S. H. Gandier)

During the war years both Provincial and Dominion Government agencies have continued to encourage the promotion of all junior activities designed to make life on the farm more attractive for the young people, and to provide some practical training that will better fit them for their future calling as the farmers and farm homemakers of tomorrow. Further, they realize fully that national prosperity through the years depends in a large degree upon an intelligent and well-informed farming public, and that every effort spent in the interests of our country boys and girls will be repaid manyfold in the years to come. It follows, therefore, that, despite war conditions, the junior work has been carried on without serious interruption beyond the fact that the majority of young people of military age are now in the armed services, and as a consequence the work, on the whole, is with somewhat younger groups. Under the stress of war, a waning of public interest in junior projects might possibly be expected. On the contrary, in many farming communities during the past year there is marked evidence for the first time of an active interest in our junior programme.

The main activities coming under the direction of the junior section of the Extension Service are the Junior Clubs and certain projects carried on through the Dominion-Provincial Youth Training Agreement.

The Alberta Junior Farm and Home Clubs.

Until this year no specific name had been adopted to include the several kinds of clubs conducted by the Department. The three divisions of club work were known as the live stock clubs, the crop clubs and the girls' clubs, and the supervision of each has been in the hands of three separate Department officers. As a step toward unifying the club work, it was decided to adopt a name that would embrace all of the junior club projects, whether on the farm or in the home, and the name "The Alberta Junior Farm and Home Clubs" was officially approved. Further steps for the closer association of all club work in the Province are under consideration.

Since the District Agriculturists are the organizers and general supervisors of all clubs within their several districts, the number, type and location of clubs depend largely upon their judgment and the amount of time that each is able to devote to club work along with his numerous other duties. The establishing of a number of new district offices during the past year and the consequent reduction in area to be served by many of these district men, renders possible the organizing of more new clubs and closer attention to many of those now functioning. At the close of the year a number of new clubs for 1944 had already been reported.

Most branches of the club work have experienced another very satisfactory season. Though the total of stock clubs was 68 as compared with 75 in the previous year, total membership was slightly larger, as shown in the table below. The crop clubs show a slight increase in both number and membership. A sharp reduction in swine clubs will be noted, while other live stock projects

remain about the same as for 1942. In the crop projects it is interesting to note the much smaller number of wheat clubs than in the previous year and the larger number of oat clubs. This is probably in consequence of a rising interest in the production of coarse grains at the expense of wheat production, especially in central and northern districts. The forage crop projects, listed this year for the first time, are also an indication of the growing trend toward mixed farming and the production of live stock.

The following tables of figures covering the past six years show rather conclusively the present trend of development in the live stock and field crop projects (figures are for clubs completing all or the major portion of the year's programme):

	Number of Clubs						Membership					
Livestock Projects:	1938	1939	1940	1941	1942	1943	1938	1939	1940	1941	1942	1943
Swine	24	30	30	22	21	13	655	612	520	353	341	240
Beef	11	22	26	27	38	37	292	551	712	625	813	883
Dairy	10	10	12	9	10	10	205	258	274	186	167	203
Poultry	....	....	....	....	6	8	....	....	....	....	96	123
	45	62	68	58	75	68	1152	1421	1506	1164	1417	1449
Field Crop Projects:												
Wheat	71	74	78	54	40	23	1385	1260	1417	896	675	384
Oats	15	23	18	21	22	30	240	296	256	295	391	542
Barley	8	7	8	8	33	30	124	98	121	92	597	484
Flax	1	1	2	1	....	2	10	9	33	10	....	26
Potatoes	2	....	1	2	....	3	23	....	13	19	....	48
Forage Crops	....	....	....	....	....	13	....	....	....	....	....	250
	97	105	107	86	95	101	1782	1663	1840	1312	1663	1734

Beef Calf Clubs.

Though there is provision in the club programme for both beef feeding and heifer clubs, all beef clubs at present are feeding clubs. Little interest has been shown in the breeding clubs for several years. The table of figures for stock clubs above shows a large increase in beef clubs in the past three years, and several new clubs now have calves on winter feed. This is by far the most popular of the live stock projects at the present time.

During the year, 37 beef feeding clubs carried the programme through to their Achievement Days and Sales, and on the whole they experienced a very satisfactory season. The plan of holding combined fairs and sales with several clubs participating has decided advantages for the individual club, and is proving more popular each year. Co-operative fairs of this kind were held this year at Lacombe, Carstairs, Edmonton, Calgary, Brooks and Lloydminster, with from two to five clubs taking part at each point. Most of the club sales were by auction, though several of the outlying clubs shipped their calves in to the regular market or sold to local buyers. The established custom at many sales of commercial firms purchasing the top calves at fancy prices for advertising purposes has aroused criticism in some quarters, and methods for conducting sales are receiving attention and study. Regulations of the Wartime Prices and Trade Board governing show stock for meat purposes apply to the beef club sales.

With prevailing high prices this Fall for calves of good beef type, some clubs have experienced considerable difficulty in securing good calves for this winter's feeding, and their initial outlay is somewhat higher than usual.

Dairy Calf Clubs.

There has been little change in the past few years in the number of dairy clubs, and though new clubs have been desired at certain places, the limiting factor of available heifer calves of reasonably good quality at prices that club members are able to pay has determined the number of dairy clubs that may actively operate. The main present source of calves is the Edmonton milk shed. The Department has continued to maintain a calf purchasing depot at Edmonton through the Live Stock Branch. Upwards of 100 calves have been obtained through the depot during the year, but this number is only sufficient to maintain clubs already established. Very few calves are offered from the milk sheds of other cities, and it has been necessary to ship calves from Edmonton to several of the south clubs. Scarcity of good calves for the dairy club work is likely to continue until after the war.

The Dairy Branch has found it necessary to discontinue supervision of keeping herd records by club members because of limited field staff. If club members wish, they may join the regular Cow Testing Service, and they are also eligible to enter the open competition for juniors in the keeping of herd records.

Swine Clubs.

A further decline in the number of swine clubs occurred this year, and there is not a great deal of interest in the swine project except in the more outlying districts where the raising of swine has not reached its peak and there is room for improvement of both type and quality. For 20 years swine clubs have played an important role in the development of the swine industry, and they have helped in no small way in making Alberta the foremost swine raising Province in Canada today. The Live Stock Branch of the Dominion Department of Agriculture continues to co-operate in pig club activities by supplying good boars to club centres under their Boar Loan Policy.

Poultry Clubs.

Poultry clubs were first introduced in 1942, when six clubs were established. This year the number was increased to eight. Expert knowledge of poultry raising is necessary in conducting poultry clubs, and for this reason their supervision rests with fieldmen of the Poultry Branch in co-operation with the District Agriculturists. The number of clubs that may be formed is therefore limited to the help that may be contributed by the Poultry Branch, and expansion in this project of club work is likely to be gradual for some time to come.

Only two of the poultry fairs had been held before the close of the year, therefore a full report of the season's work cannot be given at this time. The group plan of judging is followed at our poultry club fairs, and appears to be working out with satisfaction to all concerned. In this method of judging, the exhibits are not placed in consecutive order individually as at all other club fairs, but the birds are divided into three groups according to their standard of excellence. It has been suggested that judging by groups might profitably be adopted in some of the other branches of the club programme.

Grain Clubs.

The different projects included in the grain club programme with number of clubs in each project and total membership are mentioned in one of the tables above. This branch of the junior club work is directed by the Field Crops Branch, and detailed report of the year's work will be found in the annual report of the Field Crops Commissioner.

Girls' Clubs.

Garden clubs for girls were first organized in 1940, but conditions due to the war have not been favourable for development in this line. In the 1943 season, six of these clubs continued to function in the Olds district. During the past three years groups of farm girls have been organized into clubs to undertake various projects in Home Economics such as sewing, cooking and preserving. This year there were 44 such clubs, with approximate membership of 795.

Both the garden and Home Economics clubs are supervised by the Women's Extension Service, and further details of this work will be found in the report of the Director of Extension Service.

Provincial Inter-club Judging Contests.

The annual inter-club judging contests in beef cattle judging, dairy cattle judging, swine judging and seed judging were held as usual in October, and Provincial champions declared. Each District Agriculturist had the opportunity of entering at the regional contests one team from each branch of club work concerned, provided there were clubs in these projects within his district. Three regional contests were held, one at the Olds School of Agriculture for teams of the south, one at the Dominion Experimental Station, Lacombe, for the central districts, and a third at the University Farm, Edmonton, for northern teams. The final contests were held at Edmonton on October 22nd, with the following club teams participating:

Beef Cattle Judging—Innisfail, North Edmonton, and Cardston.

Dairy Cattle Judging—Rosalind, Linden, and Abee.

Swine Judging—Liberty and Erskine.

Seed Judging—Vauxhall, Spedden, and Consort.

The team representing the first club named in each case proved to be the winners. Following therefore are Provincial Judging Champions for 1943:

Beef Cattle Judging—Jean Edgar and Charles Cutler of the Innisfail Beef Club.

Dairy Cattle Judging—Evalene Pederson and Leon Boulter of Rosalind Dairy Club.

Swine Judging—Cecile Dunbar and Maxine Workun of Liberty Swine Club.

Seed Judging — Fred Hildenbrand and Cyril McAndrews of Vauxhall Grain Club.

National Club Judging Contests.

The annual Inter-Provincial judging contests were held at Toronto and Guelph on November 22nd and 23rd, under the jurisdiction of the Canadian Council on Boys' and Girls' Club Work. The four club teams winning Provincial honours in October represented Alberta at these contests, and brought national honours to the

Province by winning the Canadian Championships in Beef Cattle Judging and in Seed Judging. Jean Edgar and Charles Cutler placed second and third respectively in individual scores, while Fred Hildenbrand and Cyril McAndrews won first and second indiviual placings. The swine judging team placed second to Ontario in team score, while our dairy team was in fifth place.

This is the third consecutive year that Alberta has won the trophy in the beef cattle section, and the second year in succession that the Province has been represented by a teaem from the Innisfail Club. In the 12 years that the National Contests have been held, Alberta has won five championships in beef cattle judging, four in swine judging and 4 in seed judging.

Junior Club Week.

The second annual Junior Club Week was held at the School of Agriculture, Olds, during the week of July 5th. This special trip and short course is the grand prize awarded to one member of each of the crop and stock clubs scoring highest in general proficiency in their club programmes of the previous year. There were 147 delegates in all. Costs of transportation, board and room, were assumed by the club sponsors as follows: For the stock club delegates, the Provincial Department of Agriculture; for wheat club delegates, the Alberta Wheat Pool; for oat clubs, the United Grain Growers; for feed barley clubs, the North-West Line Elevators Association; for malting barley clubs, the Canada Malting Co.; for flax clubs, the Alberta Linseed Oil Co.

At the close of the course, delegates winning the scholarships offered by the Alberta Surplus Wheat Board Money Trust toward expenses of the first year of the regular course at the School of Agriculture, were announced as follows:

For Beef Clubs—Clarence Hummel, Castor.

For Dairy Clubs—Clara Belle Webb, Linden.

For Swine Clubs—Cecile Dunbar, Calmar.

For Wheat Clubs—Laura Storch, Morrin.

For Oat and Barley Clubs—Frank Pawlowski, Spedden.

The success attending this special "Club Week" in the two years that it has been held might well warrant giving it a permanent place in the junior club programme.

The Junior Club Bulletin.

This is the club newspaper that is sent out quarterly to all club members. It has been in continuous publication for the past 11 years, and acts as a medium for placing before the clubs much information with respect to club work that does not reach them by other means. The "Junior Club News", a quarterly publication of the Canadian Council on Boys' and Girls' Club Work, is also sent out to our club members along with issues of our own club bulletin.

The Junior Farm Forum.

This is a weekly broadcast of 15 minutes over Station CKUA through the Fall and winter months, for the special benefit of club members and all other boys and girls living in rural districts. For the current season it is scheduled for 11:30 every Saturday morning. Attempts have been made by various means to determine the average number of listeners to this programme, but results are not

conclusive, and there would appear to be some doubt that the effort and expense involved are justified.

The Dominion-Alberta Youth Training Agreement
(*Schedule "E"*)

This office has continued to be responsible for the supervision of youth training projects included under Schedule "E" of the Dominion-Alberta Youth Training Agreement for the current year.

Division "A"—Trainees at the School of Agriculture.

Division "A" of the schedule provides for assistance to a limited number of farm boys and girls in necessitous circumstances to attend the regular fall and winter courses at the School of Agriculture. Seven boys and seven girls completed the 1942-43 term with this help. The applications of four boys and three girls were approved for the 1943-44 term commencing on October 12th. A number of later applications had to be rejected, as accommodation at the school had been filled. In all 204 country boys and girls have had assistance from this source since it was first available several years ago.

All of the Youth Training students completing the term's work last spring were successful at their examinations, and several made high standings in their classes.

Division "B"—Farm Repair Schools.

Under Division "B" provision is made for winter courses of from three to six weeks duration in farm mechanics to be held at points where the instruction is desired and will prove of benefit to young men on the farm and to agriculture generally in the district, age limits being from 16 to 35 years inclusive. Owing to farm labour shortage in all districts, even through the winter months, it was found that groups of sufficient size could not be organized for the longer courses. With wartime restrictions on new machinery in mind, the work attempted was confined strictly to repair of farm implements and motors for a period of three weeks, groups being limited to a size that might be handled by one instructor, with a minimum of 10 trainees. Great difficulty was experienced in finding properly qualified instructors who were not already permanently employed.

Eventually, two series of three schools each were arranged, commencing January 25th, one in the north and another in the south. The three northern schools at Mannville, Vermilion and Smoky Lake, with H. C. Locke in charge, were very successful, and splendid work was done. Trainees and parents were most enthusiastic concerning the instruction given and amount of repair work accomplished. The school at Mossleigh was the only one held in the south. The instructor in charge of this series became seriously ill and was unable to continue, neither could a competent man be located to replace him. Repair schools were therefore held as follows:

Opening Date and Place	No. of Trainees
January 25th, Mannville	16
February 3rd, Mossleigh	11
February 15th, Vermilion	13
March 9th, Smoky Lake	18

Quite a number of centres were anxious to have schools, but could not be accommodated because qualified instructors were not

available for the work. At the spring meeting of the Advisory Council on Schedule"E", it was decided that these repair schools should be continued in the following fall and winter if conditions at that time were favourable.

Though no new schools were held before the end of the year, several of them are planned for the remaining winter months.

Special Course for Building Stook Sweeps.

During the threshing season of 1942, a number of home-built stook sweeps were used to advantage in a few districts, one sweep doing the work of from three to five bundle teams and several men. With the farm labour problem more acute than ever this year, the Department encouraged the development of the stook sweep idea throughout the Province by offering short courses of two weeks at the School of Agriculture in the building of sweeps. Country blacksmiths and machine shop operators were admitted to these special schools under provision of Schedule "K" of the Dominion-Alberta Training Agreement, with the expectation that on their return home they would build sweeps for farmers who desired to place orders. Since only a limited number made application through the Youth Training Plan, farmers desiring to take the course at their own expense were also admitted. Supervision and instruction were given by the mechanics instructor and the blacksmith of the staff of the School of Agriculture.

At the two courses commencing May 12th and June 2nd, a total of 15 trainees were admitted with Youth Training assistance, and an equal number of farmers were accepted to fill the classes. Subsequent applications under the Youth Training Plan were not sufficient to justify acceptance of more trainees, but the school was in continuous operation through the summer with farmers in attendance who wished to build their own sweeps. In some cases, sweeps were completed at the school, while in others the partially built machine was shipped back to the home farm to be completed there. In all, some 70 sweeps were completely or partially built at the School of Agriculture.

The use of stook sweeps in Alberta has now advanced to the point where upwards of 400 of these machines were operating during this year's harvest, and the sweep courses at Olds undoubtedly made a very substantial contribution to this development.

REPORT OF THE ACTING SUPERVISOR OF RELIEF SETTLEMENT PLAN

(E. B. SWINDLEHURST)

The problem of unemployment and the burden of relief assistance during the years following 1929 were matters which aroused considerable discussion. One result was the introduction of a policy whereby the Dominion, Province and municipalities agreed to contribute to the assistance, for settlement on the land, of families who would otherwise be in receipt of direct relief. It was recognized that in the urban centres there were certain families with previous agricultural experience who, if offered financial assistance, would welcome the opportunity to return to rural life.

The Relief Settlement Plan was introduced in Alberta in 1932, and placement of settlers continued until 1941, by which time conditions were improved to such an extent that it was considered inadvisable to proceed with further settlement. Until 1936 the maximum amount available for each family was $700, but in that year assistance was increased, so that amounts varying between $700 and $1,000 could be provided, depending on the size of the family. An amount of $380 was used for the purchase of stock and equipment, and the balance reserved for sustenance to cover a period of three years, although as the policy progressed encouragement was given towards the purchase of additional stock and equipment in lieu of sustenance. This first developed with the purchase of additional cows in cases where settlers could prove their ability to obtain sufficient feed, but later the policy was extended so that additional necessary equipment could be acquired. The amounts of assistance mentioned above refer to those families who were the relief responsibility of organized municipal districts. Other families who were not the responsibility of any organized district, but who received assistance direct from the Province, obtained the Dominion and Provincial contribution only. Until 1936, the amount available in these cases was $400, but upon completion of the 1936 agreement assistance was increased to $600. The average total amount expended on families from contributing municipalities was around $800. Where there was no contributing municipality, the full amount of $600 was expended in practically all cases.

The appointment of an Advisory Board at the commencement of the plan proved valuable. This board consisted of representatives of the Dominion and Provincial Governments and of the Departments of Colonization of the Canadian National and Canadian Pacific Railways. Members met at regular intervals to consider applications, interview applicants, check inspection reports and land agreements. Towards the end of the second year of settlement each case was again reviewed by the Advisory Board, and necessary expenditures for the third year approved.

Prospective settlers themselves located land on which they desired to reside, but before any land was accepted by the Board as suitable for settlement, it was inspected by a fieldman of the Department and a report submitted for consideration. In addition to considering the physical properties of the land, distance from railway and school were also recognized as important. Periodic

calls on settlers have been continued. Inspectors were provided with inventories of stock and equipment in possession of the settler, so that a check could be made at each visit and any increase or changes noted. The inspections provided a record of the progress of the settler, enabled fieldmen to offer advice in many instances, and proved a valuable contact between the settler and this office.

Purchases under the Relief Settlement Plan have now been discontinued, and many settlers are making payments on their indebtedness. Payments to December 31, 1943, amount to $28,794.91, representing payment in full of the recoverable portion of assistance by 61 settlers, and partial payments by 87 others. In addition to this, an amount of $74,248.68 has been recovered as a result of salvage due to settlers leaving the farm. In 1943, 37 settlers abandoned, making a total of 604 during the time of the operation of the policy. Since the total number placed on farms was 1,092, the percentage of abandonments to December 31, 1943, is 55.3%. Causes of abandonment were: Enlistments, 72; obtained other employment, 215; failures, 185; other causes, 132. War conditions and the increase in employment have resulted in several abandonments during the past three years, and it is interesting to note that the percentage of actual failures is 16.94% only of the number of settlers originally placed.

REPORT OF SUPERINTENDENT, PROVINCIAL HORTICULTURAL STATION, BROOKS

(P. D. Hargrave)

During times of conflict a great deal of emphasis is placed on the production of horticultural crops. This is necessary to maintain the health of the nation. More than half of our normal food consumption is the result of horticultural endeavour. For this reason, encouragement and assistance to Victory garden growers is very important. During the past year the growers of Victory gardens in the United States of America produced an eight million ton harvest, more than one-half of that nation's vegetable production. If this is the production of our neighbour to the south, similar importance should be given to Alberta's vegetable production.

The direct and indirect extension work of this Station was closely linked with the progress of the Victory garden grower during the past year. There were changes of staff and improvements made to Station facilities during the year. The retirement of Mr. M. L. Freng, District Agriculturist and Superintendent of the Station, was followed by the appointment of Mr. Ira Lapp as District Agriculturist. Although there is no direct connection between the Provincial Horticultural Station and the District Agriculturist's office, a very progressive and congenial co-operation is maintained in policies that affect the immediate district. The opportunities for co-operation with District Agriculturists in other parts of the Province are, of course, not so direct, but more and more work is being done through the demonstration orchards and with field days and short courses.

The labour problem throughout the season has been serious and frequently critically short of demand.

The grounds surrounding the new office building have been levelled and partially planted. The old office building has been moved on to a good foundation and repaired. A new root cellar for the storage of seed potatoes, to aid in combating bacterial ring rot, has been constructed. Bridges have been constructed, and many of the larger culverts and water gates replaced. Some of the older orchards are ready for removal, but heavy equipment was not available for this purpose. Fences surrounding the Station property are in need of repair, but this has not been undertaken due to the limited supply of fence posts. One of the larger fields has been levelled, and the programme of destroying weed infestations has been continued.

The plan to equip this Station with tractor drawn implements was continued, and no live stock is now maintained by the Station. A tractor plow, a row crop seeder, potato digger and furrow opener were added to the field equipment, and a bicycle was made available to members of the staff for use on the Station grounds.

The tree fruit crop was light, but small fruits yielded well. Throughout the district and in the Province generally, commercial growers of small fruits experienced a very profitable year. The practice of supplying disease-free strawberry plants to British Columbia, started by this station, has expanded.

The exceptionally dry year and short season had an unfavourable effect on the experimental work which was being conducted by the Station.

Climate.

The winter of 1942-43 was the first "test winter" experienced in the prairies since 1936-37. Rains occurred throughout the Fall and until freeze-up. Most trees and ornamentals were caught in full vegetative growth, and it seemed doubtful if they could survive even a mild winter. This doubt proved well founded, because in Manitoba and Saskatchewan winter killing was the severest on record. Fortunately, and peculiarly, winter killing of fruit bearing trees, ornamental trees and shrubs was negligible in Alberta. Greater damage was suffered after growth had commenced in the spring because there were late heavy spring frosts, in April, May and June.

The growing season was one of the driest on record, with practically no rain in June and July. Fortunately, relatively high humidity and very few dry winds occurred during the summer. Otherwise irrigation water could not have been spread quickly enough to maintain growth. The extreme drought taxed to the utmost the assistance available for the distribution of water, and none of the crops except those which germinated on summerfallow or fall plowing were above average in yield.

TEMPERATURE AND PRECIPITATION RECORD, 1943

	Max.	Min.	Av. Max.	Av. Min.	Precipitation
January	46	—47	5.9	—12.5	.75
February	52	—29	30.3	6.8	.26
March	59	—26	29.3	5.3	.54
April	79	21	61.5	34.1	.54
May	81	23	63.0	37.2	1.08
June	85	30	69.0	44.2	.50
July	99	41	84	52.3	.88
August	91	40	79.9	48.4	1.71
September	89	28	71.2	39.1	.40
October	91	18	60.3	33.4	.25
November	66	10	48.8	20.5	.03
December	56	1	41.09	13.7	.05
Total					6.99

COMPARATIVE TEMPERATURE RECORDS, 1939-1943

Year	Date of Killing Frost: Last in Spring	Date of Killing Frost: First in Autumn	Length of Growing Season	Max. and Min. Temperatures: Month	Max.	Month	Min.
1939	April 25	Sept. 27	154	July	99	Feb.	—43
1940	April 17	Oct. 14	180	Aug.	96	Jan.	—32
1941	May 22	Sept. 25	125	June	101	Jan.	—20
1942	May 16	Sept. 25	130	July	95	Dec.	—18
1943	May 14	Sept. 19	127	July	99	Jan.	—47

Fruit.

Winter killing, as a result of the long winter of extremely low temperatures, was not serious, but there was considerable crotch and bark injury. The latter was comparable to sun scald, but occurred on the north side of the trees. Both injuries were due to immaturity of the wood at the time of the first severe frost.

Trees leafed out, blossomed normally and were almost past bloom when frost occurred in early June. These frosts seemed to do more damage than the low temperatures of winter. Many of the older trees, which previously had set good crops of fruit, were badly injured. Trees of the larger crab apple test orchard suffered very little damage, and only one tree out of the 1,400 planted was completely killed. This, peculiarly, was unfortunate, for we think that many of the varieties are not suitable to prairie culture, and it was

hoped that they would be segregated by a "test winter". There is a possibility, of course, that the winter of 1943-44 will destroy many of the trees which were not noticeably injured during the previous winter.

Due to the unfavourable season, only about 3½ tons of fruit were harvested. This was a very light yield compared with an average of 20 tons of fruit harvested in former years. In comparison with the yields obtained in other parts of the prairies, however, this crop was well above the average. With the exception of three-quarters of a ton which was shipped to other markets, all the fruit was sold at the Station, where a system of rationing was required because of the keen local demand.

The crab apple test (Orchard E), made up of 11 varieties—Amur, Dolgo, Columbia, Robin, Florence, Olga, Alred, Jewel, Piotosh, Osman and Trail—bore its second crop in 1943. This orchard was planted in April, 1939, to give the leading crab apple varieties a more comprehensive test. To date, Trail is the weakest grower, due possibly to the winter injury of internal tissues. None of the varieties have shown consistent tip killing. The yields to date are shown in the following table:

CRAB APPLE TREE YIELDS—TREES PLANTED SPRING 1939

Yields in lbs. per tree

Variety	1942	1943
Amur	.2	1.66
Dolgo	.14	.14
Columbia	.5	.22
Robin	.5	2.5
Florence	.91	1.17
Olga	.82	2.41
Alred	trace	trace
Jewel	1.17	5.14
Piotosh	.....	.19
Osman	trace	.73
Trail	*	*

*Trail bore small quantities of fruit during the past two seasons, but it was stolen by vandals before harvest.

These figures should be qualified by the fact that averages have been taken on the basis of all the trees of each variety. In most cases, only a few of them were fruiting, but these bore heavy yields.

The selection block of *Pyrus Baccata* (Brooks 31A, 31B and 31C) is making good progress, but will not be large enough for top working until the summer of 1945.

Very few of the high quality plum varieties fruited. No outstanding seedlings were selected, although attention was focussed on a group of trees originating from Manchurian seed. These plums showed no winter killing, bloomed profusely and bore some fruit, for the first time, in spite of the heavy frosts. The plum variety M101 flowered and fruited, and was again the earliest standard plum to mature. This variety is outstanding among the newer introductions, and is worthy of trial throughout the Province. Another plum, Minnesota 89, mentioned in previous reports, bore a heavy crop. Although this plum was selected and numbered many years ago, it has not been given the attention it deserves by those who introduced it. However, it has done so well in other parts of the prairies, after the severe winter, that it will receive greater attention during the next few seasons. It is not a variety for the north-central part of the Province, but should do well where any medium season selections will mature.

The test orchards were maintained, and all of the newly propagated varieties were set out. These include 253 varieties of apples and crab apples as well as 348 stone fruits. A large number of new varieties were introduced to the Station. They include 43 stone fruit varieties, 10 apple and crab apples, 1 pear and 26 small fruits. The planting of seedling blocks was not as extensive as in former years due to lack of help at planting time.

No new selections were numbered during the year, due in part to the short fruit crop, nor were there any canning or cooking tests. The tubbed breeding trees went into the new storage cellar in fair condition.

Small fruits, with the exception of strawberries, wintered well. The strawberry varietal test plot was severely injured, and only a few of the older named varieties survived sufficiently to warrant further testing. These varieties include Senator Dunlop, Premier, Gem, Mastadon, Stebart Northern, British Sovereign, Ralph, Simcoe and Tupper.

Tests

Field tests and demonstrations were carried out more extensively during the past year. The potato, pea and soy bean fertilizer plots were established in co-operation with the Fertilizer Advisory Committee. Rape, sunflowers and corn were planted under field tests. Working with the Dominion-Provincial Vegetable Production Seed Committee, co-operation was extended in an advisory capacity, and field trials of new crops were conducted at the Station. Grass seed trials were also begun.

Fertilizer Tests.

The potato fertilizer test was enlarged for two purposes. First, to obtain further data on the best fertilizer practices, and second, to increase certified seed and so aid in the control of bacterial ring rot. To further develop potato stocks on hand, tuber unit plantings were made at the same time. A summary of the potato investigations for the past two years will be available in mimeographed form, and can be obtained upon request.

Soy bean and pea fertilizer trials were established so that more definite information would become availabale on advisable practices. The data obtained is being prepared for presentation to the Fertilizer Advisory Committee, and will be available upon request.

Potato Varietal Yield Test.

There are usually two tests of this nature carried on at the Station—one of early varieties and the other including all varieties. Comparative yields resulting from these tests for the past two years are as follows:

EARLY POTATO TEST PLOT, 1942

Variety	1st digging July 23	2nd digging July 31	3rd digging Aug. 7
Irish Cobbler	5.8 lbs.	6.9 lbs.	7.3 lbs.
Warba	5.4 lbs.	7.6 lbs.	10.6 lbs.
Early Epicure	4.9 lbs.	10.2 lbs.	8.6 lbs.
Carter's Early Favourite	3.6 lbs.	6.4 lbs.	6.7 lbs.
Bliss Triumph	2.8 lbs.	6.5 lbs.	8.2 lbs.
401-2-3	2.4 lbs.	4.9 lbs.	6.2 lbs.
Early Ohio	1.8 lbs.	4.6 lbs.	9.4 lbs.
Averages	3.8 lbs.	6.7 lbs.	8.1 lbs.

EARLY POTATO TEST PLOT, 1943

Variety	1st digging July 31	2nd digging Aug. 6	3rd digging Aug. 16
Bliss Triumph	7.8 lbs.	14.1 lbs.	15.6 lbs.
Early Epicure	8.2 lbs.	7.9 lbs.	14.3 lbs.
Vick's Extra Early	7.0 lbs.	8.2 lbs.	9.6 lbs.
Warba	8.6 lbs.	10.8 lbs.	15.8 lbs.
Carter's Early Favourite	5.9 lbs.	7.7 lbs.	12.8 lbs.
Early Ohio	5.5 lbs.	8.2 lbs.	12.8 lbs.
Netted Gem	4.5 lbs.	6.0 lbs.	9.3 lbs.
Red Warba	7.0 lbs.	.....	.....
Averages	6.8 lbs.	8.9 lbs.	12 8 lbs.

Bliss Triumph, Early Epicure and Warba yielded best in 1943. Unfortunately, it was not possible to include the variety Irish Cobbler, which gave best results in 1942. In both years the leading varieties yielded above the average on all three picking dates.

None of the early varieties are outstanding commercial potatoes under Station conditions, nor under conditions in other parts of the Province. Having this in mind, it is hoped that a breeding programme for the improvement of early potatoes as well as late varieties will soon be undertaken.

Comprehensive data on late potatoes has been obtained in former years. However, because it is felt that many of the new varieties did not receive sufficient consideration, a collection was gathered at the Station in 1943. These new varieties have been grown under similar conditions so that a sufficient quantity of each variety with similar cultural history is now available for future tests.

Beans.

Bacterial blight has become increasingly severe, and in many districts is destroying commercial bean production. There are two methods of overcoming these difficulties; one is the planting of disease free strains and the other a breeding programme to produce disease resistant strains.

Tests of disease free strains obtained from Marysville, California, known as "Calopproved" beans, were conducted in co-operation with the Field Crops Branch. The varieties—Standard Pink, Light Red Kidney, Dark Red Kidney, Bountiful, White Kidney, Tendergreen and Black Valentine—were clean throughout the season. The test was well isolated, and the season favourable to the production of disease free stocks. Seed of the above varieties was saved and will be carried through further tests.

Varieties suitable for crossing have been grown in the greenhouse, and experience gained relative to their time of bloom. A second seeding was made, and the plants will be ready for hand pollination early in the new year. The object of this work is to transfer disease resistant characters found in dried bean varieties to green and snap varieties.

Vegetable Trials.

The results of the 1943 vegetable trial plots, including the tomato varietal test, were discarded. The poor germination which resulted in uneven stands and the frost of June 8, which destroyed a high percentage of the plants, so limited the trials that results would not have been reliable.

Corn.

The popcorn breeding trial is showing very satisfactory progress in that a number of selections of white strains have been isolated,

and are ready for increase during the coming year. A satisfactory harvest of White Flint and a fair harvest of Burbank Golden Bantam was completed. These two varieties are maintained at the Station for seed stock. It is hoped that selections out of White Flint will prove suitable for the manufacture of starch.

Field Crops

Sunflowers.

Three varieties of sunflowers—Sunrise, Mennonite and Manchurian—were grown under field trial. All matured satisfactorily, but Mennonite was ready to harvest 10 days earlier than either of the other varieties. This variety is not well fixed as to type, and considerable selection could be undertaken along this line. The variety Sunrise is a much more suitable type for combine harvest, and selection within the variety for earliness seems feasible. Manchurian sunflowers are strong, vigorous growers with heavy yielding heads and well filled seed. Because of its strong, tall, coarse stocks, it is not suitable for direct machine harvest. The varieties Sunrise and Mennonite are suitable for both row and broadcast planting.

Rape.

A seven acre field of Black Argentine rape grossed 7,240 pounds, or 1,034 pounds per acre, and a net yield clean seed of 5,600 pounds. Heavy dockage was due to cracked seed being removed. It would not be necessary to remove this cracked seed in a commercial sample. With a guaranteed price, this crop is promising for dry land and irrigated farms in southern Alberta.

Grass.

The trial plantings of grass varieties were sown with a nurse crop to test this method of establishing stands under irrigation conditions. The plot, to date, does not appear promising.

Ornamentals

The area at the Station set aside for the planting and testing of ornamentals has been filled, and before further spring planting can be undertaken, another section of the old plum orchard will have to be removed. The trees planted here represent the only planting of its kind in Alberta. There should be at least one other similar development in another part of the Province, preferably central Alberta. If this cannot be undertaken at some other institution, it might be advisable to develop a sub-station for this purpose.

Vegetable Seed Production

Although Alberta is well known as a seed producing Province, no attempt has until recently been made to grow vegetable seeds as a commercial crop.

In 1942, the Department of Agriculture secured, through the Dominion Seed Branch, an allotment of beet seed, and a Dominion-Provincial Vegetable Seed Production Committee was formed. This committee deemed it advisable to locate the seeding of this vegetable in the Eastern Irrigation District, with the view in mind that the Provincial Horicultural Station could be called upon for advice and instruction.

Of the crop harvested, the major part was stored in a local root cellar and the remainder in a "Vee" pit in the field. The beets

stored in the "Vee" pit kept exceedingly well, and shrinkage amounted to only 1%. The growers who stored their stecklings in the root cellar reported shrinkages from 5 to 95%. Although these figures were not encouraging, the growers who availed themselves of the advice from the Station made a good showing, and were very enthusiastic to carry on.

Early in 1943 the Dominion-Provincial Vegetable Seed Committee again met, and were successful in obtaining further contracts for beet seed, and extended their programme to carrots, onions, radish and rutabagas.

Mr. J. A. McKay was appointed supervisor of small seed production to work out of this Station, taking charge of contracts and seed distribution and advising on growing and cultural practices, harvesting, threshing and storage.

Due to unfavourable moisture conditions, roots did not attain the size of those grown in 1942, but a very satisfactory crop of stecklings was harvested. The smaller sized stecklings are, possibly, a better size for storing and replanting.

Beet stecklings seeded well in 1943. One grower had an average of 600 pounds of clean seed to the acre. This seed sold at 85c per pound, making a total of $5,160 from a ten-acre field. Radish was fair to very good. The seeds graded No. 1 and had a germination of 98% in four days. The heaviest crop went 800 pounds to the acre, and sold at 35c per pound. This two-acre plot yielded the grower $560. These are the best yields to date. With more experience among the growers and with acclimatized seed, greater yields may be expected. To attain this end, the Horticultural Station grew increase plots of sugar beets, table beets, rutabages and radish; also a varied line of vegetables and oil producing seed for trial and test.

Extension

The principal extension project supervized by the Station are the 54 demonstration orchards maintained in co-operation with farmers throughout the Province. First plantings reached their fourth growing season during the summer of 1943, and as previously planned, field days were held to discuss with the people of the surrounding district the success or failure of the methods undertaken. The fruit trees in the plantings have become established and some have fruited. Proper pruning is the greatest handicap found to date, and more attention to this factor is required.

The Station staff assisted at 15 field days and short courses throughout the Province in co-operation with the Extension Branch, and five field days and meetings were held at the Station. The new office building is lending itself very well to the furtherance of extension activities in the district, and is frequently used for meetings of agricultural interest. The Station staff assisted the local District Agriculturist in the supervision of garden and potato clubs.

Correspondence increased tremendously this last year, and 1,462 letters were answered from March 1st to December 31st. This increase was possibly due to the fact that fewer people were able to visit the Station. The decrease in the number of visitors at the Station was largely due to the restriction on travel. This, of course, is unfortunate, because seeing things grow is the best advertisement

horticulture has in Alberta, but it was fortunate in that it lightened the demands placed on the smaller staff.

Three publications were prepared. They were "The Recommended Varieties of Fruits and Vegetables and Zonation Map," a pamphlet on "Victory Gardens," and a circular covering "Vegetable Storage". The first mentioned publication was the result of work done by the Alberta Horticultural Zonation Committee, and has proved one of the most useful horticultural publications from the standpoint of the average home owner.

It was not possible to prepare horticultural exhibits for the shows in Calgary, Edmonton or Lethbridge due to the extremely short fruit crop.

The policy of preparing farmstead and orchard plans was continued. It is becoming increasingly difficult to devote time for this branch of our work, but we feel that this important branch of horticultural extension should not be neglected.

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